

# JiAPS

The Journal of  
the international  
Association of  
Physics Students

The New JiAPS. Issue 1, November 1996



ICPS'96

Define JiAPS!

Central Office Report

## The Future of IAPS?

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### Credits

JiAPS is the Journal of IAPS  
(the International Association of Physics Students)

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subscribe to subscribe to the list  
unsubscribe to unsubscribe from the list  
show to receive the membership list  
Send messages to <iaps-list@nikhef.nl>

## The Editor Speaks

Allow me to introduce myself: my name is Miguel Carrión Álvarez and for the next academic year I will have the pleasure and the honour of editing the Journal of the International Association of Physics Students (JiAPS). So that you have a more informed (but not truer or more accurate) image of me, I will give some relevant and irrelevant (but not very enlightening, in any case) data about myself:



**Relevant (and irrelevant) data:**

**Age: 20 (but, alas, not for long).**

**Studies: 4th year Physics student at Universidad Complutense de Madrid, Spain.**

**Specialization: Fundamental Physics.**

**What I do in my free time: Read, listen to music, go to the cinema, study 2nd year Mathematics at UCM (no, it's not schizophrenia, it's masochism), travel, edit JiAPS, practice fencing, and generally increase entropy and thereby contribute to the Thermal Death of the Universe.**

**What I don't do in my free time: Watch TV, drink, smoke, study a third major (I'm not that masochistic).**

**A wish: That days had 48 hours rather than the usual 24.**

**I hope you are not satisfied with this information. If you want to know more, meet me in the next ICPS! By the way, for the benefit of those who are not *very* familiar with Spanish culture, we in Spain have two surnames and therefore it is not correct to refer to me as *Mr. Miguel C. Álvarez*, as the subscription services of most English-language journals like to do :-)**

And now for something completely different: what I want to do with JiAPS this year. If you have been a member of IAPS longer than I have (not that that's very difficult, but hey, who knows?) you will have noticed a change: this is printed rather than sent by e-mail. It is an improvement, contrary to what Bill Gates and other prophets of the computer era may think. It was decided at the last General Meeting because, we thought, it would increase the impact of the Journal. At any rate, it increases the momentum it carries if you throw it, and in case of an impact...

Now seriously, my project for this year is to find out exactly what kind of journal IAPS members (that's you) want and try to implement that before the next ICPS. It seems that the old format, and possibly the old contents as well, was not very attractive to the readers. I am charged with re-starting the new Journal ('new' because it's printed, if for nothing else) and I would not want to see it fail because I gave it the wrong focus. I also have my own ideas, but you will read more about that later in the issue.

In this issue you will find (among other things, and not necessarily in that order): a short section about the Central Office, or rather by the present and former CO's; a report on the ICPS'96 by Olav, without whom this issue of JiAPS would not have been possible, introducing the concept of the IGPS (Infamous Gossip on Physics Students); two articles from IAPS Copenhagen and Croatia about themselves; and, last but not least, a summary of the strongest trend in the IAPS mailing list (and before in the ICPS'96 discussion groups), namely the future of IAPS.

The cover picture illustrates this topic. I chose Escher's print because it captures the essence of *perplexity*, which might well be the natural reaction in face of IAPS's problems: IAPS needs to be improved and yet nothing seems to be wrong. Similarly, the impossible cube is impossible, and yet it exists.

Read and enjoy,

Miguel Carrión  
JiAPS Editor

## The Executive Committee

**Editor's Note:** *This was meant to be a broader section with an introduction of all the newly-elected members of the executive committee. Due to a certain lack of coordination, JiAPS cannot offer you that information. However, we do have the Central Office Report, to the effect of an statement of purpose and a call to action of IAPS members. We also have that short introduction by Ramón de Vries, Past President, and Olav Frijns, member of the Financial Control Committee and former Secretary. And we have pictures! What more can one ask?*



### Central Office Report.

It's been a month and a half since we (Daniel, Franjo and I) were elected to be IAPS Central Office. It was the first time that the person who would be the President of IAPS had had enough time to select his Secretary and Treasurer and to make a team with them, and we got it!

We arrived in Szeged with the previous knowledge of the resources the University would give us, the addresses where the new IAPS Central Office would be placed, and with a handful of new ideas. Of course, we were very enthusiastic to run the Central Office. Almost everything was planned before the General Meeting in Szeged, and since then we have had the opportunity to put the organizational structure we had designed to a real test. Dear IAPS members, let me tell you that it has worked much better than expected.

The circumstance in which we've worked has probably been the worst possible because we were in exam time, and after finishing them we have been outside Granada for more than a week, so the number of e-mails waiting for us increased up to 457 messages. It's been a hard work to filter and answer those messages, but fortunately at this moment we have no work left to do. However, that's not true at all. We have lots of ideas for IAPS, and we need your help to carry most of them out, especially to make the following working teams:

- i) Expanding IAPS: We want to make IAPS a real international organization, with members in the five continents.
- ii) Linking IAPS: We want to increase the number of links to the IAPS homepage, to make it easier to get in contact with us.
- iii) IAPS history: We would like that old members of the IAPS Executive Committee to write some articles about their work, and old IAPS activities organizers to make some reports with statistics, photos,... about the activities they organized.
- iv) IAPS future: we would like you to discuss (not through the mailing list) about the new directions IAPS should take and, above all, about the practical way to do it.
- v) Physics database: We want to make a database of the dates of important events in the history of Physics.
- vi) Physicists database: We also want to make a database of researchers and their field of work.
- vii) ORG address: A workshop should discuss about the possibility of getting an ORG e-mail address, and they would give the Central Office a complete report about profit, economical expenses, and so on.
- viii) JiAPS on paper: This **important** workshop should work on the preliminary documents to make APS & EPS a proposal for printing and distributing JiAPS.
- ix) Advisors: We need advisors, but how can we get them? How can we present the idea to make it attractive?
- x) Sailing through IAPS history: This could be a game based on answering questions about IAPS history (something like the one we tried in the last ICPS). We would need some old members to carry this out.
- xi) Fundraising: This workshop would work in close cooperation with the Treasurer to make a list of possible firms where IAPS could get some money.

If you are interested in any of these workshops, please write to IAPS Central Office informing us about your preferences and/or giving us some practical ideas about the way to focus the work; finally, we'll distribute this information through the members of the workshop.

Finally, we would like to thank the last Central Office, and especially the former President Ramón de Vries, for their help to make us 'pedal the IAPS bicycle' with the necessary intensity.

Best wishes for everyone in IAPS,

Óscar Pleguezuelos García  
President, IAPS Central Office

## The Past President

My name is Ramón Sylvain de Vries and I'm the Past President (so last year I was the President).

**Some (technical and useless) data:**

**Born:** 7 November 1973.

**Length:** 1.86 m.

**Weight:** 71 (+/-) kg.

**IQ:** unknown (irrelevant data ;-).

**Studies:** 5th year, Applied Physics

at the Delft University of Technology.

**Specialization:** Pattern Recognition, see the homepage at <<http://www.ph.tn.tudelft.nl>>

**e-mail:** <[ramon@ph.tn.tudelft.nl](mailto:ramon@ph.tn.tudelft.nl)>.

**Some do's:** swimming, driving a car, visiting Kirsten in Copenhagen, barkeeping.

**All don'ts:** smoke, drink alcohol.

Let's talk business.



As President I answered the questions addressed directly to me or the questions passed over by the Secretary Olav. One other thing I did was getting the snail-mail from the mailbox at our department. But one of my most time-consuming occupations of the last year for IAPS was the updating of the homepages. Editing and checking the homepage can be quite boring. Getting the right look isn't that simple: we had a policy that even someone who has lynx or even a worse browser should be able to extract data from the homepages, but we also wanted to use some advanced features of Netscape like wallpaper and tables. The new student homepage we started gave a lot of work because every link had to be checked online (a lot of people make mistakes when they subscribe). Since this checking had to be done online I did it once in a while on the University network. I think Oscar, too, now knows how many hours it will take to build a good Homepage for IAPS. Once in a while we had a IRC discussion on the Internet; I did the chatting on a PC at our department. That PC had some strange habits like crashing just when it's getting exciting. And sometime in May the department restricted the use of the PC until 18.00 h., so I had to leave the IRC meeting before it had ended. But now I have an unlimited access via the computer of the Pattern Recognition Group, so if the New Central Office is going to chat on the IRC, I'll be able to join them. Because I know a lot of the <[iaps-list@nikhef.nl](mailto:iaps-list@nikhef.nl)> I will help the Central Office with the mailing lists.

Ramón de Vries  
Past President of IAPS

## Olav Frijns, Former Secretary

My name is Olav and you should all remember me as the former Secretary of IAPS.



**Some data:**

**Age:** 22 years.

**Studies:** 5th year student in Applied Physics in Delft.

**Specialization:** radiation detection.

All other details won't interest anyone so I won't talk about them. By the way, I think it's more fun if Ramon does it, so I'll ask him to do so when he returns from Copenhagen. (If you want to know what he's doing there, take a look at my photo archive at <<http://ph.tn.tudelft.nl/~ramon/olav.html>>)

Now let's talk about the job of secretary.

The most important task is sorting e-mail and that can be both fun and boring. Other tasks of the secretary are reading and writing physical mail, but that doesn't happen so often, as it costs money.

First of all you have to *read* the e-mail and as this happens at home at my own desk it's usually done late at night (to save telephone costs, I mean, we're Dutch and we have to live up to our reputation). At such a moment there are two possibilities: one, you've just been having a very good time and you're already drunk so the only thing you really want to do is go to bed; two, you still have to start partying so you have something better to do than sitting behind a computer. The fun part of it is to see how bad some people's English can be. [Editor's Note: Oh, really?] My spelling checker usually has a lot of work to do when I add the original text in the reply, and don't forget that some people can write very inspiring e-mails. Then comes the really exciting part, namely *answering* that e-mail. This is a part where you can be very creative and with quite a lot of alcohol in your veins it can be very fruitful. The best replies are written deep in the night.

Another secretarial job is keeping up the archives. This is quite hopeless as the IAPS archive is more of a mess than my sister's room, so the word *maintaining* would be more appropriate. I think the new president asked me to make of list of everything in it, and I think I will fulfil this request *with IAPS speed*. That's the true problem of IAPS: because people don't see each other everything happens very slowly during the year to get in a real acceleration during an ICPS. A very important job is to kick the President's ass if he's in one of his more lazy periods. This should not be underestimated: without secretaries in this world presidents wouldn't be half as effective.

I hope I've given you a bit of an idea what a secretary of IAPS must do. Next time I'll tell you about being a student in Delft.

Olav Frijns  
Former Secretary



## ICPS 96 in Szeged, an Impression

by Olav Frijns, former Secretary of IAPS 1995-'96

With this article I would like to give you an impression of the ICPS'96 which was held in Szeged, in South-East Hungary. For people who have never heard of the International Conference for Physics Students, the intention of the ICPS is to bring Physics students from all over the world together for one week to discuss their work and their experiences and to share ideas about Physics and other topics. Most students get a chance to give a lecture (in English) in front of a large audience about a project they are working on. Besides the lectures there's enough time for social events and, sure enough, a lot of international contacts are formed during the week.

This year I was the Secretary of IAPS and together with my Treasurer we drove to Szeged in the IAPS staff car. Not that IAPS is wealthy enough to afford a car for its Central Office, but the CO was creative enough to arrange something. And this is our story:

It was a warm and sunny day as we drove across the hot southern Hungarian planes risking our lives on a semi-motorway full of mad, overtaking, life-tired Hungarian drivers. Our approach to Szeged seemed like the gates to Hell; it started with Russian hookers standing at bus stops waving at any car with men in it. Suddenly the Sun disappeared and heavy clouds gathered over the city of Szeged; just as we drove in the thunderstorm started, and within a few minutes all the streets seemed canals like in Holland. Fortunately the Organizing Committee had provided us with a map of Szeged, so we expected to find the check-in point easily, but when we saw the pastures again and a sign saying 'Romania not far away' we realized that the scale of the map and our ideas about the size of Szeged were a little exaggerated. Finally we found our destination, the 'Herman Otto Kollegium' (whoever knows what this brave person has done to earn such a typical Eastern European concrete student stable, should tell me), where we were received by some genuine Eastern European bureaucracy.

After some waiting and filling in lots of forms we finally got to our room. One thing you had to admit is that all these forms served a higher goal as the organization (dinner, excursions...) went very smoothly the rest of the week. After we arrived in our room we started to see everything from a much brighter side. We got a spacious room with three beds and our own sink. Compared to the accommodation in Copenhagen (which was probably three times as expensive) this seemed like the Szeged Hilton. Enough showers each morning and a beautiful view out of the



*Szeged, photo by Jan Arlt*

window. Apart from the fact that the warm water tube could explode, leaving the whole building with a cold shower, and that the toilet paper got scarce near the end of the week, the accommodation was perfect.

That night would be our first encounter with Szeged. Let me tell you something about Szeged: it's a medium-sized regional center very close to the borders with both Serbia and Romania. The city center is really beautiful; everything is yellow and orange and built in the same style because the whole old town was washed away by the famous Great Tisza Flood of 1879. You don't come across a huge crowd of tourists because there aren't any. In the streets you

can breath (also because they have already started an anti-auto policy, no parking spots, etc.) an atmosphere comparable to that of an Italian city and everyone is very friendly. Shops are open long enough and you don't get ripped off if you sit at a terrace. The rest of Szeged consists of low-fantasy Stalin-style apartment blocks, but let's forget about those. Between the hostel, which is used as a student dorm during the year, and the center, where the University was



*The Soon-to-be-Former CO, photo by Jan Arlt*

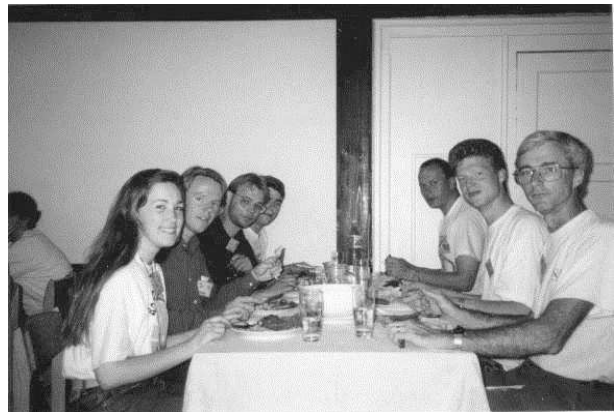
located, there was a park and the famous Tisza river which was crossed by a bridge still under renovation.

Our first evening was spent in the JATE Club. JATE is the name of the University so as you can guess, this club was the place to be for the students of Szeged. This club was like a large cellar with a bar and a disco and a lot of freshmen at that moment. In this bar we had a good time meeting other people and of

course seeing our friends from last year's conference in Copenhagen again. Two people weren't able to share this joy: first, our beloved President, Ramon de Vries, who was deprived of the opportunity to use his Dutch-Danish dictionary for the first time, as he had to prepare his presidential speech for the next morning; second, Martin from Bavaria, who we met in the park on our way to the bar. He was looking very sad as they didn't have any beer in the bar. And he was right. We've heard about ten explanation why there wasn't any beer flowing through the drafts, like: 'You're not allowed to drink here before you're 25', 'They want to give the freshmen a good sober start', 'Stalin has forbidden it', 'They fear the English will demolish the bar if they get the opportunity to drink after 23:00', 'The University disapproves of beer', 'Beer is simply out of stock in the current 5-year plan', and the most plausible one, 'The drafts have been disapproved by the quality inspection because small animals crawled out of it'. Anyhow, this wasn't such a big problem as you could just walk out around the corner to the 24-hour shop to buy some cold beer and take it back in. The owner of the shop must be in Monaco by now. He even removed all the meat from the fridge to make space for loads and loads of beer bottles. There was one problem though: How to open these bottles??. After such an evening the walk back seemed very short and we fell into our warm and soft beds very satisfied.

The next morning was our first experience of Hungarian breakfast, which was served at a canteen just around the corner. Let's say the food was quite special, quite a lot and quite fat for the early morning. Some people liked it, others tried to stay in bed the rest of the week. Everyone agreed about the tea, we still wonder how they made it that sweet. The conference started that morning with a nice speech by György Marx about the battle we were losing at the moment against the pseudosciences, astrologists and fortune-tellers. After that it was time for our president to show what he had been doing the whole night. After his very interesting speech about multiple-person bicycles we had our first Hungarian coffee break experience. The coffee was very good (strong), and the food supplied with it could be considered a bit special for a coffee break, but delicious, though. During lunch break we went outside, because despite the rain and clouds the day before it was sunny and warm now, and lying on the grass seemed like heaven. You must know that most Universities could be jealous of the location of JATE in the middle of the center of Szeged, around the square in front of the big church, but still having quiet lawns in the courtyards.

The whole week we had lunch in a nice restaurant in the center with a large typical dining hall. The food was quite good, but again it was quite a lot for a



*Lunch, photo by Olav Frijns*

lunch break. We Dutch are not used to that. In the afternoon the first lectures were given in some old lecture halls which were very pleasant places to be. That evening we had dinner in Hagi restaurant. We obviously didn't have a good eye for choosing a restaurant to fit to our needs, as our behavior in this place was not completely in accordance with the usual public eating there. We had a lot of fun about Jorg's imitation of the Hague dialect, but the violin player had quite a hard time playing loud enough. The dinner was very good, by the way, and the same goes for the beer.

That evening was the opening party in the JATE club. After playing some stupid games to get to know each other there was a disco, where Mr. President realized he hadn't bought his Dutch-Danish dictionary for nothing. Just as we were going to make a small correction to his tasteless behavior he disappeared,



*The Opening Party, photo by Olav Frijns*

only to be found again in the hostel dirty and tired. When we crossed the Tisza river that night we realized that we were starting to appreciate Hungarian life in the fine city of Szeged.

Tuesday was a special day for the Hungarians, as it was St. Stephens day, who was the first king of Hungary some 1100 years ago. During daytime we had an excursion to the Opusztazer Memorial Park, which can best be described as a large open-air museum about Hungarian history including



a Cyclorama, a large 360-degree dome-filling painting. Most of the participants were very grateful to the organizers for choosing a park with such nice and sunny meadows, and they made extensive use of it to recover from the previous nights. That evening was the performance of Elisabeth, a musical about the life of the Austrian empress Elizabeth. The fact that this large scale production was staged in front of the Cathedral in the open air under a star-filled sky, with brilliant lighting and decors compensating the fact that it was in Hungarian and thus incomprehensible for most of the students. We're waiting for the moment when this production will pop over the border.

Wednesday was a day full of very interesting lectures about very different subjects, showing us that physics is much broader than we usually think. Of course the lawns and the terrace outside in the square were tested, too, and approved. Did you know that shopping in Szeged can be quite funny?

After the lectures we were expected in the Town Hall, where we were welcomed by the mayor of Szeged himself. His speech was in Hungarian and none of the organizers trusted their English, so poor Monica had to be the interpreter. Our president also gave a surprise speech, which he had prepared in about 5 seconds. After the speeches we went to the courtyard, where a very luxurious cold buffet was ready; it was well received by everyone, still remembering breakfast that morning. If you looked carefully you could see everyone making plans for the National Party that evening, since with national honor at stake for the next year the act had to be good. The first part of the evening was reserved for some national presentations which resulted in two tourist offices (Turkey and Croatia sponsored

their students with some glossy leaflets) and a lot of food: Swiss chocolate, Danish herrings with cream and spirits, American cookies and apple pie (originally Dutch of course) and the famous Spanish sangría. After that it was time for the acts. The Danes tried to exploit that fact that they were many and sang their *kylling med soft-is og polser*, which couldn't match last year's song at all. The Georgians were the big surprise of the evening as it appeared that they could immediately do an audition for a musical. Our Norwegian friend must have melted in that typical Norwegian costume later in the disco, and we Dutch just strengthened our reputation. Just like the English, we definitely have to practice our singing skills to beat the Georgians and the Russians next year. As host country the Hungarians gave a complete Hungarian folk dance course, which for most was a bit difficult to follow after all the national booze before. Needless to say, the disco afterwards was a success.

On Thursday, besides the lectures some discussion groups had to spend time discussing the future of IAPS. These groups had been formed on wednesday during the IAPS workshop, which had as a *mission impossible* the task of defining IAPS. After this work it was time for a boat tour on the river Tisza. Unfortunately the boat was closed, so we had to look at the river banks, full of playing and swimming children (and of course let's not forget those nice green fields that were floating in the river), from behind glass. During this boat trip a meeting with the founders of IAPS had been scheduled, but it would take us too far to mention more details about that. For us the time of hard work had begun as the conclusions of the workshops had to gathered and written down somehow. The typing squad (Kirsten, Jan and yours faithfully)



A Most Impressive Buffet, photo by Jan Arlt



After the Buffet, photo by Ramón de Vries



IAPS Workshop, photo by Olav Frijns



spent quite a long time behind a computer. Only Danish beer kept us going. Others probably got drunk in the bar or in the nice river boat discos by the Tisza river. Poor Bent still had to prepare his lecture at three o'clock in the morning, but I think he couldn't sleep at all the whole week with all those nice mosquitoes anyway.



*Bent at 4 AM, photo by Jan Arlt*

The next morning the effects of a whole week of partying became apparent. The president designate, who promised to give a speech, seemed awake at 8, but after that he was *missing in action* again 'till lunch time. Others had quite a hard time swallowing breakfast. By the way, when we walked across the bridge we always passed some green and brown swimming pools. After the first feelings of disgust we were informed that they were in fact quite healthy and that we should take a swim if we had the time. Unfortunately we haven't taken any swims in Szeged, because we had to spend quite a lot of time on diplomacy. Some candidates for the IAPS Executive Committee had to be arranged before the General Meeting and that proved to be quite difficult. But before we got to all this serious stuff it was party time again. This Friday evening there was the closing party. The organization had arranged a nice... let's call it *camphouse* in the woods outside Szeged where we would get our first traditional Hungarian food (apart from the breakfast), namely gulash soup. After this delicious dinner there was a band, a disco, a lot of beer, and a lot of fun. Some people were already so tired that they fell asleep next to their girlfriends on a ping pong table. The Danish squad just got drunk singing songs, keeping a good student tradition alive.



*The Danes and Their Friends, photo by Jeff Fixler*

The next morning, Saturday's, was probably the only morning we did not get up early. We should have, though, as we had to prepare the General Meeting that afternoon. As Central Office we were supposed to give a report about last year. The organization had been so friendly as to arrange a very beautiful meeting hall in one of the University buildings, equipped with a modern voting system which we didn't use and some wooden supports to avoid a collapse of the roof. After we arranged some last-minute drinks and food for the Chairman, his Secretary (me) and everyone else at the front table, we started the meeting. The meeting went more smoothly than we had anticipated and after 6 hours of talking, voting and listening we had arranged everything, including the very difficult task of finding a new President Designate. Coffee-break Diplomacy can get you quite a long way.

After this meeting we decided to have a proper dinner at Hagi's again. You probably wonder why I haven't mentioned dinner at all so far. This has a



*A Well-deserved Dinner, photo by Olav Frijns*

simple explanation: apart from the gulash and the Town Hall 'banquet' this was our first proper dinner since Monday. The rest of the time your beloved CO had been working so hard (bla bla) that we'd had to live on biscuits and McDonald's. Anyhow, despite everyone being very tired, we had a good and pleasant last supper, a last ice cream at our favourite terrace, and we crossed the famous bridge over the river Tisza for the last time.

The next morning was good-bye morning. When almost everyone had left in Lada taxis after a lot of tears and promises to write, we took our IAPS staff car, which had amazingly not been stolen during this week, to drive to Budapest over the hooker highway. For us the week was not over yet. The organization had



*Taxi to Copenhagen, photo by Olav Frijns*

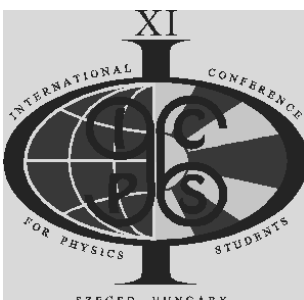
arranged a hostel of the same kind in Budapest where we could stay for the last night. This hostel was even better than the one in Szeged. The rooms were bigger [Editor's Note: my room had no door!] and it was in the center of Budapest, with a nice parking spot in front of the door. That afternoon we did what we had been planning for the whole week: we took a bath in the famous Gellert Hotel swimming pools. We even discovered the sauna, but we didn't have the time to enjoy it, as they closed it too early. In an effort to find a cheap place to eat, we ended up at a Chinese restaurant near the Danube. This restaurant had very



*The Last Supper, photo by Jan Arlt*

unpleasant, even rude, waiters who forgot what we ordered, but that couldn't suppress our joy about the whole week. That night, we strolled across the city searching for a nice place to drink and we found one. The attic of a small pastry shop happened to be quite a special café where we drank our last beer discussing last week's gossip.

Monday morning it was finally over. The IAPS staff car drove back to Holland in one go, except for a short stop in Vienna, where we kicked Jan Arlt out. Of course it took us three days to recover from this health-threatening ICPS experience, but I can guarantee you that it was a perfect week. Next year I'll make sure I attend the ICPS'97 in Vienna, and I can advise everyone else to do so.



## IGPS'96 (Infamous Gossip on Physics Students)

by Olav Frijns

**Editor's Note:** *Olav was not supposed to write the preceding article, only this less serious counterpart. However, due to a certain lack of coordination (where have I heard that one before?) I had to resort to him for the 'official' report as well. You may find some repetitions but hey, nobody's perfect.*

Hi again,

Miguel asked me to write a section for JiAPS packed with ICPS gossip. I guess I promised to do it while I was a bit drunk, but what does it matter? I'll think of something.

Hmmm, let's see, what happened during the ICPS in Szeged? People got drunk, which is hardly interesting to write about: everyone gets drunk every once in a while, some people more often than others. Secret romances then: that sounds more interesting but, if you think about it, it all seems a bit disappointing. There were enough lovely couples, but they were already having an affair before they went to Szeged, although that wasn't true of all of them. Take for instance the President of IAPS at that time: OK, we could have suspected something when he started to buy Dutch-Danish dictionaries after the ICPS in Copenhagen, but to say they were seeing each other already would be too much...

Something that can't be omitted in a gossip section is of course the *Did you know...?* section. So let's kick off...

## Did you know that...

- Hungarian female students don't speak English very well
- This is a problem when you try to have a go at the blond IAPS President
- He had a lot of explaining to do to some Danish girl as a result
- The lyrics of the Dutch song from the National Party cannot be obtained from us
- You can go to jail for spreading around the most innocent lyrics
- Our beloved newly-elected President from Spain locks his door while he's sleeping
- He was probably not alone in his room
- The reception at the Town Hall was the first time Mr. President wore a suit without making a lot of fuss over it
- A photo of Mr President in a suit can be worth a lot of money in Delft
- Our treasurer almost did some unrepairable damage to the innocent soul of a poor Romanian girl
- Our Secretary was to blame for that
- Martin, the Bavarian, could outdrink everyone by a factor of 2
- Mr President almost got very wet some night
- That will be taken care of very soon in Delft
- You can find photos of the ICPS at various places in the Internet
- You can get loud if you drink too much
- Mr President built up a very good reputation in Copenhagen as Mr. 'Nur Limo'
- This seems to be a typical presidential affliction as his predecessor wasn't much of an alcoholic either.
- None of the organizers had enough faith in their knowledge of English or Hungarian to translate the Mayor's speech
- This was already obvious when you saw the signs in the Hostel
- 40 people more were expected to attend this conference
- Most of those absents were from Russia
- Russian vodka is more expensive in Szeged than in Russia
- Bent wears earplugs in discos
- He has a full scientific explanation for that
- It really seems to work
- Mr. Past President is in Copenhagen at this very moment
- He's not there for business
- Neither for computers
- When Mr. President was missing he was sitting behind a computer
- Some Danish girl walked around sadly at those moments
- If you couldn't sleep you must take a look at room 307
- You couldn't do anything else but sleeping afterwards
- There are some rules that should be respected in public places
- People shouldn't sleep naked when they are in function

And then of course there is still the Mystery of the Rose. As you all know (and if you don't you'll find out) Jan got involved with some Rumanian girl later in the week. She was very flattered by the beautiful rose she found on the doorstep of her room. The only problem is, as Jan denies all responsibility for it: who put the rose there? We have our suspicions, but before we start accusing anyone we'd like to gather some more evidence, so if you have any clues, please send your suggestions to the IAPS-list.

OK, I hope I gave something to think about and if you know more, please send it to JiAPS. OK, that's for the gossip now, I'll try to write a more serious report for a future edition of JiAPS.



## The Future of IAPS

by Miguel Carrión

This article is motivated by the discussions on the IAPS mailing list during the last month. The main topic of the discussion was, as Remco Hammen put it, «[...] *the identity of IAPS. What is IAPS? What does IAPS stand for? What does IAPS do more than sending around some e-mails, and making sure there is an ICPS next year? Why should I want to be a member of IAPS?*». This had already been discussed during the last ICPS. What follows is based upon the ICPS and mailing-list discussions, and also on several official, semi-official and unofficial IAPS documents, but it remains largely my own opinion. So here it is: what is IAPS?

### 1. IAPS in Itself

Paraphrasing the goals of IAPS as stated in the Charter, IAPS aims at improving communication between students around the world and generally aid them in their personal and professional development. What distinguishes IAPS from other student associations is that it is international and therefore expansion is one of its main interests; it is also an association of associations. The main difference between IAPS and other international Physics associations is that it is composed and managed only by students. This may well be its most attractive feature, but here lies its main weakness as well, as we shall see.

The governing body of IAPS is the General Meeting held during the ICPS. Between conferences there is an Executive Committee and a Central Office (President, Secretary and Treasurer) that run the association and coordinate its other activities. IAPS has three kinds of membership: individual members, Local Committees and National Committees.

IAPS implements the above goals through a number of activities, the most important of which being the ICPS. The importance of the ICPS can hardly be underestimated: there were two editions of the ICPS before IAPS even existed, as IAPS was founded during the *second* ICPS at Debrecen, Hungary, in 1987. Since then, IAPS has gone beyond its primary mission of ensuring continuity of the ICPS, and at present it has the following quite diverse activities:

- The ICPS, an annual International Conference where members can present the results of their practical work in English before an international audience. The ICPS is also the single most important means for direct contact between members.
- JiAPS, the Journal of the Association. The Journal is yet another channel for communication between members, as well as an internal newsletter. It is currently undergoing drastic reforms.
- The IAPS mailing list, not as dynamic as the IRC channel but permanent. It is the most important means of interaction between members apart from the ICPS.

- The visit to CERN, an example of how an activity organized by a local committee was so popular that it became part of IAPS' policy.
- The IRC channel, where members can engage in real-time communication.
- The IAPS Web page, a way of displaying information about IAPS, its activities, and its members for the use of both members and non-members.
- The Network of Contact Persons, a list of people from various countries and institutions who are willing and able to inform other IAPS members about study/research or other opportunities in their country.
- The upcoming activities organized by members are announced to other members, and may be considered IAPS activities.
- IAPS has other activities, but some, like the Exchange Programme, are currently on hiatus. Apparently, IAPS does not have the resources to carry them out properly.

One would assume from reading the preceding paragraphs that IAPS does not have any serious problems. True enough, it would be an improvement to have representation in every country, or to have more material resources, but otherwise... The truth is that, apart from problems regarding its relationships with members and outside organizations, IAPS faces two definite problems: focus and continuity.

Apparently the last Central Office realized that IAPS lacks focus. The goals of IAPS are «*at the moment [...] some broad and unclear statements, which are simply not suited to present IAPS to someone else, not even to ourselves*» (from the document 'What is IAPS?' from the last ICPS). The solution to this problem is the production of a Statement of Mission (see opposite page). IAPS seems to do little more than to ensure the continuity of the ICPS, and this brings us to the other of IAPS' problems, namely continuity.

As students, IAPS members have a short 'life cycle' within the organization (necessarily shorter than their time as university students). The time they can spend as 'active members' who organize activities or belong to the Executive Committee is even shorter.

The most demanding (and most important) tasks, like organizing an ICPS, cannot be done more than once. Therefore, continuity of IAPS is its biggest problem, together with the recruitment of new members. This problem has been partly tackled with the creation of the positions of Past President and Designated President, but it is still difficult to find suitable candidates.

## 2. IAPS and its Members.

Some (most?) of the members of IAPS do not even know they are members. How is this possible? Because they become members automatically when they join their Local or National Committee, which is usually a very large pre-existing association for which IAPS is one of many activities and probably not a priority. Even those who know they are members do not show much interest in IAPS activities. Why? Because it seems that IAPS does little more than organize the ICPS, and even that is done by a Local or National Committee. To quote Olav Frijn's reaction to the IAPS mailing list discussion, «[...] *as Remco stated it, noone cares! [...] people who you expect will do a lot for IAPS tend to decrease their activity as soon as they are physically separated from the others [...] Work for IAPS does not pay off immediately. The social pressure, which drives us all we like (or know) it or not, is absent [...]*».

Looking at the above list of activities and goals, it is apparent that the main function of IAPS is to coordinate the activities and encourage communication between Physics Students at different parts of the world, be it in person, via e-mail or else. As it is, IAPS cannot offer an exchange programme - the best we have is the

Network of Contact Persons. It seems that IAPS does nothing, but that is not so. The criticism that IAPS does nothing itself is a fallacy. It is not the organizations but their members that organize activities. This brings us to what members can offer to IAPS.

The more activities IAPS members organize, the stronger IAPS becomes, as it can offer more activities to other members. If you think IAPS should be doing something, why not do it yourself? One should join IAPS because (s)he agrees with the goals of the association, to contribute to the common effort, not just to 'join the ride' on the ICPS. As Damir Kovacic wrote, «[...] *if students want to get something from IAPS they need to offer their time and work; [...] IAPS should be an association of giving, [...] not an association of taking.*»

This is all very well, but what can IAPS offer to new members? IAPS helps break the isolation of both individuals and associations. Its Network of Contacts (and generally of information exchange) is ready to be used and willing to reach farther, and this saves you the effort of finding contacts yourself. The ICPS is very attractive, and I think it is good enough to join IAPS. Another good thing is that IAPS is student-based, student-oriented and student-run. However, once inside IAPS, members can easily become unmotivated because, in a sense, what seemed good enough to join in does not seem good enough to stay.

## 3. IAPS and other organizations.

IAPS has very limited resources and a way of changing that would be to cooperate with other established professional associations like EPS or AIP. What IAPS would obtain from such a cooperation is

### Statement of Mission - Draft Proposal

by Jan Arlt

**Based on the article *what is IAPS?*, the workshop *Define IAPS* and on Dwight Neuenschwander's draft of an IAPS proposal to AIP, I worked out a Mission Statement for IAPS. I decided to work on a Mission Statement first, in order to be able to work out a proposal to AIP based on it. Please comment on this proposal by quoting it and adding the part you wish to add or change. By doing so on the IAPS mailing list we should be able to work out a Mission Statement we can agree on.**

The IAPS (International Association of Physics Students), the only international student-governed association of physics students, exists to promote the academic and professional development of physics students, and to provide a space for international networking among them. During the 10 years of its existence these general goals have evolved into five specific missions:

- 1) to develop the students' communication and leadership skills,
- 2) to provide students with an international network of personal contacts,
- 3) to give students a broader view of Physics,
- 4) to introduce students to the various Physics Societies, and
- 5) to promote Physics outreach programs among its members.

The IAPS realizes these missions

through a variety of programs and activities. The three main activities that IAPS is devoted to are: 1) organizing the ICPS (International Conference of Physics Students), 2) publishing JIAPS, the Journal of IAPS, and 3) maintaining a Network of Contact Persons.

All of these programs and activities implement some of the above missions.

The ICPS provides students with the opportunity to organize and participate in a physics conference. There they can present their work before an international audience and engage in an early experience of public scientific communication. Since the conference is held in English, which is becoming the language of the international scientific community, it is an opportunity for students to practice this language. The organization of the conference as well as the administration of IAPS, whose General Meeting

is held at the conference, give students a chance to practice leadership skills. Sessions in the conference provide students engaged in science outreach programs with the opportunity to share their methods and results and to encourage others in that effort.

The JIAPS gives students another chance to engage in scientific communication and to exchange their thoughts on various topics. These topics can include IAPS activities, physics outreach programs and exchange possibilities.

The Network of Contact Persons is an up-to-date database of students involved in IAPS from Universities all over the world, including their field of work. Other students interested in a special field of research or students who want to study abroad can access that database to build up personal contacts.

clear: monetary support, contacts in professional associations (AIP; EPS) and laboratories (CERN, ILL, DESY, ...). It has also been pointed out that IAPS cannot compete with IAESTE when it comes to finding job opportunities, so it would be a good thing to cooperate with them. However, what can IAPS offer in return?

Apparently, IAPS' only asset is that it is a student organization. However, professional physicists tend to think that it's a liability: 'Organizations run only by students dissipate easily'. The problem of IAPS is that, despite its impressive record of 11 ICPS's, it still lacks credibility. The question of credibility can also be partially solved with the production of a Statement of Mission. One of the main problems of IAPS is thus convincing others (mainly

professional physicists) that IAPS is a 'serious' organization. This should not be very difficult since we know it is true. The most important proposals in this direction came from Dwight Neuenschwander, who, regarding both continuity and credibility, proposes the creation of an IAPS Board (preferably an *advisory* Board) composed by professional physicists. Regarding this question, Kjetil Kjernsmo wrote, *«I think we are students and they should take us for what we are. If we need some Dr. So-and-So he becomes the person in front, and not us. But of course, if there is no other way, alright.»* There is also a growing (and largely ignored) resource of IAPS, namely its *alumni* (old students). With alumni in universities, laboratories and associations all over the world, it should not be too difficult to get 'credible support'.

### Musings on the Question of an IAPS Board

by Dwight Neuenschwander

**On the IAPS Boat a few weeks ago, we discussed the problem of long-term leadership continuity in IAPS. The idea of some kind of "Executive Committee" or "Board" made of established persons who can help oversee IAPS and give it continuity, seemed to be looked upon favorably. In my personal opinion, the IAPS might benefit from such a structure for two reasons: (1) Continuity in leadership, as was recognized; and (2) Credibility outside IAPS itself.**

#### Continuity

As we know, the need for some kind of Board to provide continuity in the leadership of any large student society, whether it is IAPS or SPS, arises because the student leaders are with the organization such a short time. In addition, after the experienced leaders graduate and move on, the Board provides a mechanism whereby their experience can continue serving the society.

The IAPS already took an important step for continuity last year, in setting up the presidential chain. Another important initiative for continuity that is now underway in IAPS is finding ways to engage your alumni. By IAPS *alumni* I am thinking of persons who have been past IAPS leaders, who have attended a past ICPS, participated in your exchange program, etc. They are your friends elsewhere in the physics community (score one for Credibility!), and their numbers are growing. You may wish to set up a database and begin sending them some kind of newsletter at regular intervals, to keep them connected with IAPS. They are also a possible source of financial contributions when they become established in their careers. They form a background of experience and expertise that can be tapped for service on the Board. Most of them would be honored to contribute their time to IAPS.

#### Enlarged Credibility Outside IAPS

A Board that includes persons established in the Physics community would give IAPS much credibility outside its own circle of members. I shared with you last week the comment of AIP's Chief Executive Officer, Marc Brodsky. He said something to the effect that "organizations run only by students dissipate easily." Jumping to this conclusion will be an attitude common to persons who do not know IAPS. We must convince them otherwise. If you have a Board that includes some established persons, one could respond to these critics by saying, "while IAPS is a student-run organization,

it is backed by a Board, whose members include the renowned Dr. So-and-So..." Having such a Board would be a strong answer to such objections (in addition to the impressive credibility that comes from documenting your history and impact).

#### What Does the Board Do?

This is up to you. As you know, there are two general models, a *Governing Board* and an *Advisory Board*.

A Governing Board is a filter through which all major proposals must be approved before going to the General Meeting. If you choose this model I would recommend having a student representative elected to the Governing Board, so that the students are represented at this level of governance too.

An Advisory Board, as its name suggests, offers the advice of its wisdom and experience, but officially stays out of governance. When a statute change or major new initiative is proposed, it would first go to the Advisory Board, who would make a recommendation to the elected leaders and General Meeting. If the General Meeting members are wise, they will take very seriously the Advisory Board's recommendation. But they are free to pass a measure contrary to that recommendation.

From what I know of the IAPS, it seems to me that an Advisory Board would better serve your purposes than would a Governing Board. The students would retain total control. An Advisory Board would be easier to organize than a Governing Board, because the duties of the former are much simpler than the latter. Whatever its involvement in governance, whatever its name, if the Board is to have meaning, it should be a group of persons who share the responsibility with elected leaders for making major decisions. While you may wish to set up the Board so that its members do not have legal liability for the business transactions of IAPS,

they will still share the responsibility of advice and leadership. Also, if the Board includes some senior persons who have long-standing relationships with IAPS, they will help preserve the institutional memory of IAPS, and keep it focused on its mission for long time scales.

#### How should a Board be Selected?

The challenge is to set up a well-defined, institutionalized mechanism for naming the members of the Board. One can imagine several scenarios from which to choose:

- 1) Nominations from national committees, with election in the General Meeting;
- 2) Appointment by elected leaders, with ratification by the General Meeting;
- 3) Automatic invitation by statute, such as former holders of certain IAPS offices, etc.
- 4) A mixture of appointments and elections;
- 5) A present officer, and perhaps an elected at-large student representative, to keep the Board close to the thinking of current members.

One may not want all the Board members to rotate off simultaneously, because continuity within the Board is essential. If its members serve definite terms, they could be staggered.

For the immediate future it may be possible to set up a board informally and quickly. One can make it formal later, after the people have agreed to serve. Among your past Presidents and other IAPS alumni, among your professors in universities, contacts in other physics societies, industry, and labs like CERN, I am sure you could find three or four persons who know IAPS, wish it well, and would cheerfully agree to lend their advice, experience and names to it, for (let us say) three years. While it would presumably require action in the General Meeting to officially institutionalize a Board, perhaps you can still organize an *ad hoc* Board for now and ask the General Meeting at the next ICPS to make permanent the temporary steps you take at first.



## Define JiAPS!

by Miguel Carrión

Until last year JiAPS was a minor activity of IAPS, if only because the approach was to minimize the effort needed to produce it. However, last year the journal was discontinued, apparently due to lack of interest on the part of both the editor and the readers. In the last ICPS it was decided that printing JiAPS regularly is crucial to its survival. Just improving the physical side is not enough. The contents have to be carefully chosen to maintain the interest of the readers. Since I was appointed at the last GM I have been considering the possible directions JiAPS can take, starting this year. A summary of the conclusions and the open questions follows.

### Focus

JiAPS remains, as yet, undefined. It can be anything from an internal IAPS newsletter to a full-blown journal, depending on our ambitions and capacity. However, I think we should strike a compromise between the two extremes.

If JiAPS is only an internal newsletter, it will lack impact. People who are really interested in knowing what goes on will have found out before JiAPS is produced through either the mailing list or private communications with the people in charge. Those who 'don't care' just would not care.

JiAPS cannot compete with established journals, and IAPS does not have the resources to edit a journal "properly". Moreover, if a student member of IAPS has something worth publishing, it would be a waste to publish it in JiAPS.

However, JiAPS can combine the two approaches. IAPS definitely needs a newsletter, and publishing an article in JiAPS should be more appealing to members than sending e-mail to the mailing list. Besides, IAPS is an association of Physics Students. It should include articles on Physics written by and for students; it can propose problems to be solved by the readers (this was suggested in the 'What is IAPS?' workshop in Szeged). A serious *student* Journal where we can exchange our views on Physics topics and 'teach' each other is a desirable thing to have. As far as I know, there are no international student journals about Physics. JiAPS can attempt to fill that void.

### JiAPS and other IAPS information channels

Apart from JiAPS, IAPS has other information resources like a web page, a mailing list and an IRC conference. It is clear that each of these has different advantages and disadvantages, and can accommodate different kinds of information.

1) The web page is a static resource available to the general public. The information displayed in it must have a long 'lifetime'. It is also the place to have the Charter and Regulations, the Central Office, LCs and NCs Reports, the list of Contact persons and so on.  
 2) The mailing list is a dynamic way of exchanging information. It is the primary channel for discussion between members, it is potentially the most far-reaching resource of IAPS (you cannot be sure that

anyone will access your homepage) and it allows quite elaborate communication through, for instance, attachments.

3) The IRC channel operates in real time. It has the advantages and disadvantages of a normal conversation, and it is more a means of social interaction between ICPS's.

4) JiAPS definitely cannot afford to be redundant with the web page or the mailing list. What is left for JiAPS to publish? Apparently very little. It would not make sense to have a 'letters' section, because you would have to wait more than a month to see your letter published and another three to see another reader's reply. As I said above, most 'institutional' information belongs in the homepage and therefore JiAPS has very little use as an internal newsletter.

### Contents

There will be three issues per year published in early November, February and May. I think it is reasonable to devote the first to the past ICPS, the second to the coming ICPS, and the last to the candidates for the following ICPS. Doing that every year would give the Organizing Committees a chance to present their candidacy prior to the General Meeting, a chance to announce the conference the year it is held, and a chance to summarize the experience after it is done.

The Journal can also publish a section about current problems of the Association. The mailing list is the best gauge of the things that interest 'active members' and the article 'The Future of IAPS' plays that part in this issue. The rest of the contents may vary, and depend crucially on the contributions of members.

In conclusion, JiAPS has to find a field that does not overlap with other IAPS resources. I think we should try to transform JiAPS into what its name suggests: a student-oriented physics journal. To do that I need the contribution of the readers. If you would like to try and write an article about a physics-related topic just as you try and give a lecture at the ICPS, if you know an interesting physical or mathematical problem, write it and send it to JiAPS. If the Journal is written by a handful of people (or, worse still, by the Editor alone) or publishes only things you can find on the WWW, JiAPS may not survive another year because *you* will not want to read it.

## Studying Physics in Croatia

by Damir Kovacic

During the International Conference of Physics Students (ICPS'96) held in Szeged I had the pleasure to meet Claudio D'Agosto, a Physics student from Venezuela. His appearance at the conference was a little bit exotic, coming from a far-away country in South America. It was a good sign that IAPS is spreading all over the world. Of course, we exchanged as much information as possible and arranged a small collaboration between Venezuelan and Croatian Physics students. This article is my contribution to this collaboration. Here I will present some aspects of studying Physics in Croatia, its good and bad points, and the attitudes of some physics students.

Studying physics is difficult; this is well known to everyone who studies (or has tried to study) physics. I suppose there is not much difference in difficulty in relation to other countries. The comparison deserves a detailed analysis, but it will be left for another time. After eight years of primary and four years of secondary school you are allowed to apply for studying in the University. In Croatia there are four universities: Zagreb, Rijeka, Osijek and Split, of which the University of Zagreb is the largest and oldest (approximately 50000 students, founded in 1669). There is a Department of Physics only at the University of Zagreb, so if someone wants to study physics to become a scientist or teacher they must study in Zagreb. In order to study physics, all prospective students must pass an enrolment exam which is, in my opinion, not so difficult. However, a careful preparation is necessary for a successful enrolment.

Formally, the studies last four years. However, due to an overload of demanding exams and other difficulties, it turns out that few students are able to graduate in less than five years. Usually it can take six years or even longer to get this piece of paper called *diploma*. I quote Antonio Siber, an excellent student who graduated recently (with 100% maximum grade record) about his expectations of studying physics: 'You know, as well as I do, that everyone of us expected a lot of physics when we were 4 or 5 years younger. We hoped that we would learn something about the way Nature works, but today we know that modern physics is still very far from that goal. We learned ton upon ton of beautiful intellectual things, which are beautiful even without a direct link with the mechanisms of Nature. I cannot say that I'm disappointed. I learned to appreciate my intellect and reasoning and use them in the best possible way. That should be enough from 5 years of studying.'

Before going into more details on studying Physics in Croatia, it's worthwhile to understand the circumstances under which students in Croatia attend Universities. Croatia, as one of the most developed



and prosperous republics in former Yugoslavia, gained independence during the bloody aggression of the imperialistic, Serb-controlled forces. One third of Croatian territory was occupied and many people fled their homes escaping from the violence and brutality of the attackers. This situation started in 1991, continued in 1992, and it remained the *statu quo* until the summer of 1995 when Croatian forces took a decisive liberation of occupied regions. In this environment, Croatian economy was in stagnation, the standard of living was decreasing, tourism -the most prosperous branch of economy (Croatia has more than 1000 islands and many touristic and historical sites) was surviving. These were hard times for all of us. Zagreb, the capital and home to nearly a quarter of the total population (there are about 4.7 million people in Croatia) was saved from war devastation, although you could see the scars of the aggression on the streets, in the faces of refugees and displaced persons, and in the prices of goods (which were and are still high). Universities were powered by small financial sources, but nothing could stop students, professors and whole academic field from working and studying as all others in the world do. In this sense, the study of physics was uninterrupted for the whole time, although it was given in an uncomfortable and embarrassing situation.

One should distinguish between the situation under which studying is done and the content (required lectures) of the studies. The content of the undergraduate study of Physics is very demanding. In my opinion, it is more (probably much more)

demanding than at other universities abroad. The study is divided in four years. In the first year, students must attend 12 different classes (among them General Physics, Calculus, Linear Algebra...) with 28 hours of lectures per week. In the second year we get a little bit 'higher' education (Mathematical Physics, Classical Mechanics...) with the same class load as in the first year. Before going on to the third year, students choose between *Physics* and *Geophysics with Meteorology*. Since I chose the former, the considerations below apply only to this division (Physics). As we approach the end of the studies the volume of lectures increases. In the third year, we listen to Classical Electrodynamics (based on Jackson's book), Quantum Physics (Schiff's, Sakurai's and Supek's books), Statistical Physics, Physics of Microelectronic Devices, Fundamentals of Microelectronics, Numerical Mathematics, Experimental Techniques in Physics, Introduction to Materials Physics, Physics Laboratory and one elective subject (I chose Energetics): again a 28-hour load per week. In the last year, there are 4 main groups and you have to choose one of them: Theoretical (Group I), Experimental (Group II), Applied (Group III) and Astrophysics (Group IV). There is a variety of subjects within those groups. However, the following are mandatory: Solid State Physics, Nuclear Physics, Particle Physics, Modern Physics and Philosophy, Physics of Experimental Methods, and four seminars. In addition, everyone must add at least two subjects with seminars, which added together gives 27 or more lecture hours per week.

From this it may be concluded that students have good spectrum of Physics lectures and they are able to acquire a quite broad knowledge. That is, for sure, a good point. Students are in position to compare different areas of physics and choose one (or more) for future career according to their ability and aspirations. As it is mentioned above, Physics is, already in itself, a field of science which requires high mental conditions, an ability to work in teams with exchanges of various and sometimes opposite ideas, an ability to work persistently toward solutions, if any. These are possible reasons why smart students with great enthusiasm and will are in position to give a contribution to the complete knowledge in their future scientific careers. Physics is a very broad scientific field. It's impossible, at present, to combine (and effectively work in) different areas (some reasons are the large amount of different information, the shortage of time, the diversity of the total knowledge...). However, a multidisciplinary approach to the problem solving seems to be *condicio sine qua non* in Science today. An ability of intelligible communication between experts in different areas is becoming an essential ingredient of science. As far as we Croatian students are concerned, there are very

few situations in which students can participate actively in a such communication and research projects. In my opinion, active involvements of students in research projects and an existence of two-way communication between students and professors (or physicists at the Institutes) should become an obligatory part of studying. After we finish and graduate, we obtain good and broad theoretical (and some practical) knowledge, but with little or no ability to use this knowledge in the real 'battle field' of science. Someone might probably criticize this view and would reject it by saying that it is the domain of postgraduate courses. Indeed it is. However, it is better to 'forge' the students while they are 'hot' by putting in them an idea of multidisciplinary and an idea of pure thinking and personal reasoning. In addition, the programme of our studies has not been updated in last eight years (I am not aware of older programmes), although there have been minor changes within some lectures. The studies must reflect the state of the art in science and we have witnessed a permanent progress in science in the last 30 years. 'Studying physics here in Zagreb? It looks like Dante's Purgatory, and if you endure it, you are enlightened in its truest sense.', says Rajko Topolnjak, a last-year student.

Students in Zagreb have good computer and experimental facilities. They are able to work on workstations (DECs) equipped with a laser printer and Internet connection. There are several different experimental labs (Scanning Electron Microscope, SQUID magnetometers, for example). The important part in the work of the Department of Physics is the collaboration with various institutes all over the world: CERN, Los Alamos, Oak Ridge National Laboratory, Cornell University, etc. in which Croatian physicists and their colleagues are tackling forefront scientific problems. After graduation, students, of course if they are not tired of physics, may be employed in two institutes of physics (Institute of Physics and Rudjer Boskovic Institute) where the majority of physics research in Croatia is done. In addition, they may apply at the Department of Physics for research or teaching assistanships. I am not aware of high-tech companies who would employ physicists (except, probably for one or two companies) for fundamental and/or applied research.

Studying physics takes an enormous time, and thus there is not so much time left for entertainment and social gathering. However, I believe it is very important for all of us who are studying physics. In addition to the usual visits to parties, pubs, cinemas and other such places, we have tried to combine our interest with relaxation by organizing several trips to physics institutes, cultural sites and other places at

*Continued on next page*



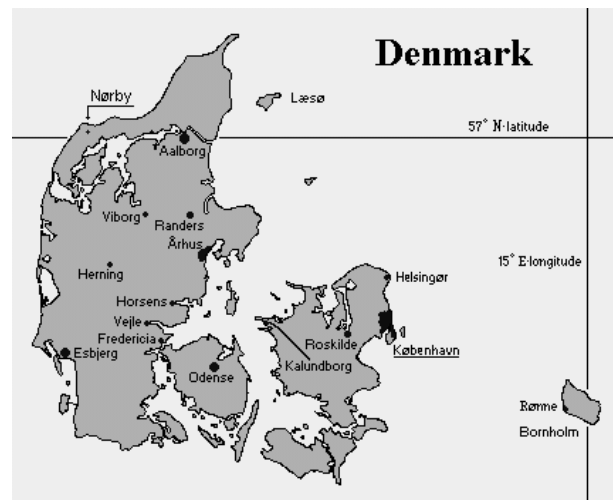
## Meet the Danes - Come to Copenhagen

by Merete Lillemark

IAPS Copenhagen would like to meet you. Why wait for the ICPS'97 or the CERN visit? There are lots of things that can be done with the network of students that IAPS is. Have you ever considered studying physics in Copenhagen? Do you know that courses for the Master degree are taught in English? Tuition is free. And the University of Copenhagen runs an International Office that is ready to help you through the bureaucracy.

There are many exchange and guest students at the Niels Bohr Institute of Astronomy, Physics and Geophysics. IAPS Copenhagen can help you establish contact with one of them - there is probably one from your home country who would like to tell you what life is like in Copenhagen. You are also welcome to ask our IAPS contact persons about anything concerning study programmes and research. You will not be the first to do that. Once you have arrived in Copenhagen a Danish student will be ready to help you with practical things and introduce you to the institute. IAPS Copenhagen also coordinates cultural activities so that guest students and Danes can meet for sightseeing, going to the cinema, museums and concerts, parties, games...

You are also welcome to come to Copenhagen for a short-term IAPS exchange visit. Copenhagen has much to offer as the Cultural European Capital'96, and you will visit the Physics departments - for example the lecture halls where Niels Bohr gathered all the famous physicists of his time. There are many guest lectures and colloquia in English every week. If you would like to come to Copenhagen on a short-term exchange, just send us a message and tell us what you can do in return, and we'll arrange something. During the visit you will live in the home of a Danish student.



IAPS Copenhagen, a Local Comittee, was founded in the winter 90/91. Since then IAPS-C has contributed to almost all of IAPS activities. IAPS-C has run the Central Office in 93/94, arranged the ICPS'95, and its members have participated CERN visits, been on short term exchange, and participated in ICPS every year. But we would also like to try something new. Any suggestions? (Well, thanks to IAPS Odense for the kind invitation). Our own idea is to arrange an 'IAPS Caravan' in connection with the ICPS'97 - to organize travelling together trough Europe. More about that later.

We look forward to hearing from you.

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### *Studying Physics in Croatia, continued from previous page*

home and abroad. There we have possibilities to increase our knowledge, and to extend the friendships created during studies. In the following lines Hrvoje Buljan, a student with 2 more exams before graduating, expresses his thoughts about students' social life: 'In Croatia it is quite natural for students to stay at home and live with their parents if the University is not far. There is no campus where students live, but there are student dormitories for those who live in different parts of the country but want to study in Zagreb. Places for social gatherings of students are in these student dorms. There is a room called 'Tulumara' that can be reserved for some day (& night) where physics students make parties with loud music, wild creative dances with a potential of finding one's better half. Sometimes we even have recitals (some of us are poets) and it is casual for morning hours that we all sit, dead tired and try to find some more energy playing guitar and singing.'

To conclude, studying physics provides a challenge and a quest of knowledge and tries to satisfy our endless curiosity about the Nature and its properties. It seems, though, that as time passes by our increased knowledge gives more questions than answers (effect of each answer giving ten new questions!). Questions that occupy our minds are partly answered through studying of physics. However, most of them are still unanswered and for full explanations we have to look somewhere else. You know where, don't you? :-)

## To Contribute to JiAPS

E-mail address: Contributions to JiAPS should be sent via **e-mail** to the Editor at **<iaps-journal@nikhef.nl>**.

Format: The preferred format is **ASCII text**, either as the body of the message or as an attachment. If the article is part of the message, it should be clearly distinguishable from whatever comments the e-mail may contain. These comment may include indications about the layout of the article (for example, if it contains illustrations, where to include them). Paragraphs should not be indented, either with tab stops or with spaces. They can be separated by blank lines.

Word Processors: Word-processed files are acceptable, although they may present problems of conversion. They should only be used if the article includes **equations** or other exceptional features. **WordPerfect 5.1** and **Word 6.0** are the preferred formats.

Illustrations: Photographs, diagrams or drawings can be sent as **attached graphic files**. If the graphic is accessible from the WWW, an **URL** is perfectly acceptable.

S-mail address: It is possible to submit contributions via surface mail (more appropriately known as snail-mail :-). This applies particularly to **illustrations** which cannot be (or have not been) scanned. The s-mail address of the Editor is

**Miguel Carrión Álvarez**  
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**Madrid 28007**  
**Spain**

Topics: Acceptable topics include anything related to **IAPS**, to **Physics**, or to **Science** in general. In the unlikely event that too much material is received, some articles may be postponed or rejected.

Length: The length of the contributions is left to the judgement of the author(s). As a rule of thumb, JiAPS publishes approximately **900 words per page**. Allowance should be made for illustrations, if they are included, at about 100 words each. A minimum length would be 450 words (a half-page). Articles longer than 3,500 words (4 pages) may be published in several instalments at the discretion of the Editor.

Deadline: A tentative deadline for submission of contributions for Issue 2 of JiAPS is **January 1, 1997**.

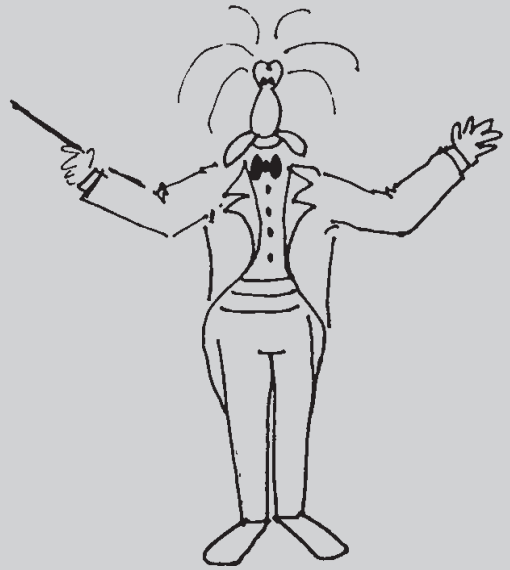
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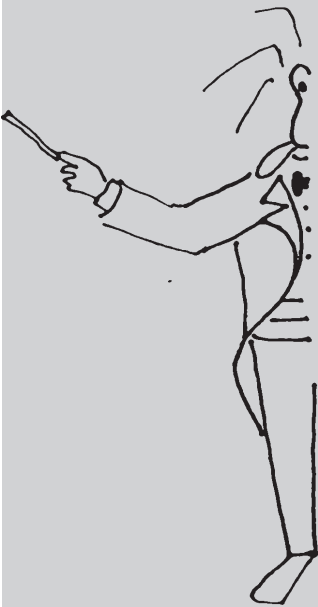
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