

## Success Based on Several Factors

As briefly mentioned in the September issue of *Europhysics News*, the Dutch Foundation for Fundamental Research on Matter (FOM) has issued a report on *Physics in the European Union in 80's*. During the decade, the countries of the Union, together with Sweden and Hungary, contributed almost 25% of all physics publications. The average citation rate for these publications was stable at about 3.4 through the decade. Above this average were placed Denmark (5.1), The Netherlands and West Germany (3.8), Sweden (3.7), France (3.5), and the UK (3.4). Of the ten specified sub-fields of physics, Denmark was ranked highest in seven and second in another. Asked to comment on these statistics, Allan Mackintosh of the Niels Bohr Institute, University of Copenhagen, responded:

"I was not particularly surprised at the high Danish citation frequency, since a Norwegian study from 1991 had earlier shown that the overall citation rate for Danish physics publications in the early 1980's was the highest in the world, somewhat ahead of the USA. However, I was surprised that we were so consistently in the lead over the whole range of "core" physics. I hope that we can do better at phenomenology (where we were number 8) when we find out what it is!

With all the usual reservations about citation analysis, most of which I share, it is nevertheless apparent that we were doing something right in the 1980's, even though we seemed at the time to be more concerned about the things which were obviously going wrong. Paradoxically, the research successes of the decade were achieved against a background of persistent staffing cuts and consequently an increasingly unhealthy age-distribution. Thus the reason for these successes was certainly

not primarily economic; the share of the public research budget spent on physics in Denmark is lower than in most western countries. However, relatively little of this money is spent on big science, so there is reasonable support for high-quality small science. Furthermore, most physics research is carried out in the universities, which I regard as a healthy tradition. The only research establishment where physics is performed on a relatively large scale is the Risø National Laboratory, which makes a very important contribution, and also has a very close contact with all the universities.

Unquestionably, an important contribution to the quality, and no doubt also to the visibility, of Danish physics is made by its international character. Over half of the publications of Danish physicists are shared with foreign co-authors, which is comfortably the highest of the countries considered in the report. This international orientation, like so many of the healthy traditions of Danish science, can be traced back to the influence of Niels Bohr. A scientific giant can indeed have an enormous impact in a small country.

We should probably be concerned that our citation rate fell substantially through the 1980's, even though we still had a comfortable lead in the second half of the decade. From our viewpoint, it would probably be a good time to stop making citation analyses, because the "absent generation" of physicists is being sorely missed in the 90's. However, a new and promising cohort is now emerging and, provided that we experienced veterans can transmit the best of our traditions to them before being overcome by old age, I am optimistic that Danish physics will be internationally competitive in the next millennium."

## ILL Reactor in Demand



The High-Flux Reactor (centre of photograph) of the Institute Max von Laue — Paul Langevin (ILL) in Grenoble started up again on 6 January, the ILL having received the green light from France's nuclear safety authority on 3 January. This authorisation was the last step in a long administrative process involving a public enquiry and the issue of a government decree, signed by the Prime Minister and by the Ministers for Industry and for the Environment. So the important neutron source and its various experimental facilities are once again available to the scientific community.

The reactor was shut down in April 1991 for major renovation work after operating for 20 years. Its modular design allowed replacement of the whole central part, notably the reactor vessel. So to all intents and purposes, scientists now have a new reactor at their disposal. The refurbishment was completed on schedule and within the planned budget. Costs were limited to 173 MFF owing to major contributions by the ILL staff.

More than 1400 scientists are expected to come this year to Grenoble from many of Europe's laboratories and universities; on site they will be fully backed-up by 52 specialists. The scientific community's interest in the ILL's neutron beams remains as strong as ever, as witnessed by the 591 proposals for experiments received for the first half of 1995 (demand exceeded the available beam time by a factor of 2.3).

The number of instruments on offer is limited, by budgetary constraints, to 25. Today, the ILL is financed mainly by three Associate Members (Germany, France and the UK) with smaller contributions from three scientific members (Austria, Spain and Switzerland). The restart could well motivate other countries to join the ILL.

### BEAMS '96

The 11th International Conference on High Power Particle Beams will take place on 10-14 June 1996 in Prague and not in 1995 as announced in the meeting listing published in the November/December issue of *Europhysics News*.



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