

pumped divertors for impurity control [*EN 23* (1992) 123] ends in 1996. The reduced budget would mean a reduced staff and no major investment. The JET Council will probably decide at its October meeting on the presentation of a formal proposal.

JET restarted its plasma in mid-March, essentially on schedule, after a 2-year shutdown to install a divertor. Commissioning continues as the plasma current is raised from 1.5-2.0 MA to about 3 MA (a milestone would be 2 MA with 10 MW of heating and the target is 5-6 MA after installation of a water-cooled divertor next year). Identifying a source of internal arcing entailed a temporary shutdown and there will be another shutdown in June to install equipment. The full experimental campaign will therefore probably begin after August, although JET hopes there will be first physics results for this summer's conferences, including the 21st EPS plasma physics conference (Montpellier, 27 June – 1 July, 1994). Meanwhile, the long-running dispute between the European Commission and the JET Team's British staff belonging to the UK Atomic Energy Authority entered a new phase following an agreement negotiated by the European Parliament's budget committee, that had withheld 59 MECU of the 1994 fusion budget until a solution was found to what the UK staff see as unfair salaries. Subject to formal approval by Parliament, some 2 MECU is made available to the 235 UK staff as a one-time compensation based on length of service (there are also some additional posts) provided their petition is withdrawn. The association that represents the staff is currently seeking advice on legal action.

#### ● NSF-Style UK Research Councils

The UK's disbanded Science and Engineering Research Council ceased to exist on 31 March 1994 when its activities were taken over by one of four Councils, three of which came into being on 1 April, notably the Engineering and Physical Sciences Research Council (EPSRC) and the Particle Physics and Astronomy Research Council (PPARC). The SERC's Rutherford Appleton Laboratory and Daresbury Laboratory will be administered jointly by EPSRC. There has been some speculation that the Director-General of the Research

### 1994 HEWLETT-PACKARD EUROPHYSICS PRIZE



The winners of the 1994 Hewlett-Packard Europhysics Prize (for discovering  $C_{60}$ ) received the award at the 14th General Conference of the Condensed Matter Division (Madrid, 28-31 March 1994). From the left, Richard Smalley, Wolfgang Krätschmer, Donald Huffman, and Harold Kroto.

Councils aims to move towards a management-oriented system similar to that used by the US National Science Foundation to approve research funding. There would be programme managers who seek independent reviews in place of advisory committees with their committee secretaries. The academic and research communities are naturally worried that their influence will be reduced. Whatever materialises, the present committee system will remain for the rest of the academic year.

## MOBILITY SCHEME

### Independence and Maths are the Differences

Student independence and the maths background reflect the main differences between learning physics in Germany and Portugal, according to Sonia Autunes from Lisbon's Instituto Superior Técnico who is presently spending her 3rd year in the Physics Department, Hannover University, on an exchange arranged by the EPS's European Mobility Scheme for Physics Students (EMSPS). The 30 students now taking her 5-year technical and engineering physics course must wait until the 3rd year before learning the maths that German students in physics study in their 1st year. So compared with her fellow students, Sonia is at a disadvantage when it comes to mathematical skills, and she thinks it might have been better if she had moved in her 4th year. The problem, is that

students in Portugal choose their speciality in the 4th year (later than in Germany) and she feels she cannot be away the year this is done.

The independence of German students is reflected by a certain maturity which strikes her: fellow students in Hannover are significantly older – an average age of 23 whereas Sonia is only 20 – and they tend to have jobs – virtually unheard of in Portugal. In Hannover, extensive tutoring is rare, independent and group study more widespread, and class sizes much larger (2- to 6-times those in Lisbon). However, facilities are definitely better: a students' residence is available, but being used to living alone she says it would be difficult to stay there for more than a year; one can even take books from the library and the cafeteria is remarkably good – for a cafeteria.

As with all mobility students, she is aiming to take courses in Hannover that are equivalent to those in Lisbon. Sonia acknowledges that only the mobility scheme's Coordinators in the host and home universities can ensure the correct overlap, given that Portuguese students tend to follow a strict programme whereas those in Germany have much more flexibility. Hannover's first two courses in quantum mechanics are roughly equivalent to Lisbon's intermediate course, and her solid state physics course has a reasonable overlap. The main difference is that she can select special topics (e.g., optical bistability) which are not available in Portugal. Her work load is about the same as back home, with

practicals (spread over three days instead of one as facilities are better) and 20 hours per week of lectures.

Sonia's main concern – as for most mobility students spending a year away from their home university – concerns evaluation. In Germany, there are weekly papers and periodic course exams throughout the year, with a final diploma exam covering all courses. In Portugal, however, one takes exams in each course at the end of the year and things are very structured with 160 examination marks in each of the first three years. She is naturally curious to know how her results in Hannover will be graded, especially as she would also like to see some weight attached to the fact that she has taken the courses in Germany. Professor Peter Sauer, her Coordinator in Hannover, indicated that he will set special exams if necessary, in collaboration with Professor Jorge Romão, her Coordinator at the Instituto Superior. This illustrates the great advantage of the mobility scheme, which recognizes that Coordinators must ensure that students are graded on courses followed elsewhere, and that these grades are credited in full back home.

Whatever the outcome, Sonia does not regret her year in Hannover; she wants to do research in Germany one day, so practicing German is a definite plus (German courses are included in her programme). Sonia, whose full name is Sonia Alexandra Ferreira de Magalhaes Autunes, feels there was nothing exceptional about her learning German and English at her lycée in Vaina do Castelo, although she admits that having a gift for languages and a desire to eventually become a physicist able to work internationally were strong encouragements.

Sonia Autunes, on the left, with Professor Peter Sauer, her EMSPS Coordinator.

