

50 MeV negative hydrogen ions into the DESY III proton synchrotron, which on 22 February supplied its first 7.5 GeV protons. From May, the modified PETRA ring will be tested out for its new role in preparing electrons and protons ready for injection into the main HERA ring.

WORKSHOP

Thermal field theory

The early history of the Universe is a crucial testing ground for theories of elementary particles. Speculative ideas about the constituents of matter and their interactions are reinforced if they are consistent with what we suppose happened near the beginning of time and discarded if they are not. The cosmological consequences of these theories are usually deduced using a general statistical approach called thermal field theory.

Thus, 75 physicists from thirteen countries met in Cleveland, Ohio, last October for the first 'Workshop on Thermal Field Theories and their Applications', sponsored by the US Department of Energy and Case Western Reserve University and organized by K. Kowalski (Case), N. Landsman (Amsterdam), and Ch. van Weert (Amsterdam).

One of the originators of the modern era of gauge field theories in thermal equilibrium, R. Jackiw (MIT), spoke about new methods for describing the nonequilibrium processes believed to be a crucial but poorly understood feature of the evolution of the Universe. With a full programme of talks, this subject was a major feature of the workshop and seems to be a growth area for future research.

Quantum chromodynamics (QCD), the theory of the quark constituents of hadrons, was the scenario for most of the talks on equilibrium methods. There was a special panel discussion on recent problems in perturbative thermal

QCD relating to the occurrence of plasmons. In other applications of the equilibrium theory, A. Das reviewed the situation in supersymmetry at finite temperature and R. Norton (UCLA) spoke about superfluidity. Two half-day sessions covered applications to the early Universe.

After extensive reviews of gravity theory and the 'inflation' modulating the initial Big Bang, E. Mottola (Los Alamos) spoke about particle number violation at high temperature while L. Wijewardhana (Cincinnati) outlined results on temperature-induced effects. The statistical mechanics of domain walls and cosmic strings and their effects on phase transitions were discussed by E. Copeland (Fermilab), H. Hodges (Santa Cruz) and R. Rivers (Imperial College London). A special session on the statistical mechanics of strings, especially fundamental strings, concluded with a general forum on the physical interpretation of thermal string theories above the Hagedorn temperature (when further heating starts to boil off pions).

The 2nd Workshop on Thermal Field Theories and their Applications will be held in Tsukuba, Japan in 1990.



Organizing committee of the Thermal Fields Workshop held recently at Case Western Reserve University, Cleveland, Ohio. Left to right N. Landsman (Amsterdam), K. Kowalski (Case Western) and Ch. van Weert (Amsterdam).

UNIVERSITY OF OXFORD
THE DEPARTMENT OF NUCLEAR PHYSICS
and
ST. JOHN'S COLLEGE

**Titular University Lecturership in
Experimental Particle Physics
Official Fellowship in Physics**

Applications are invited for an Official Fellowship in Physics, with effect from 1st October 1989 or a later date to be arranged. The appointment will be made by St. John's College in conjunction with the Board of the Faculty of Physical Sciences, and the title of University Lecturer will be conferred upon the successful candidate, who will be expected to carry out the normal duties of a University Lecturer and Official Fellow.

The present experimental research programme of the Nuclear Physics Department includes preparation for experiments with the DELPHI detector at LEP (CERN) and ZEUS detector at HERA (DESY); the SOUDAN 2 experiment on proton decay; measurement of neutrino mass; the Sudbury solar neutrino project; development of cryogenic detectors. The Department would expect the appointee to participate in some part of the above programme, or develop new initiatives associated with future accelerator projects (the SSC, for example). Further details of this research programme may be obtained from Professor D.H. Perkins, FRS, Nuclear Physics Laboratory, Keble Road, Oxford OX1 3RH.

Further particulars of the appointment may be obtained from the College Secretary, St. John's College, Oxford OX1 3JP, to whom thirteen copies of applications (one only from overseas candidates) should be sent to arrive not later than 15th May. These should include a curriculum vitae, list of publications, and a statement of research interests and teaching experience, and the names of three referees. Candidates should ask their referees to send references direct to the College Secretary to arrive by the above date.

Shortlisted candidates will be interviewed in Oxford on 5th and 6th June. All applicants are asked to indicate a telex, fax, email, or telephone number where they can be contacted during the period 19th May to 2nd June.

UNIVERSITY OF SOUTH CAROLINA

**Faculty Positions in
HIGH ENERGY PHYSICS**

The Department of Physics at the University of South Carolina invites applications for two tenure-track positions in the area of experimental high energy physics. The positions are at the assistant professor level although appointment at a higher level may be considered for an exceptionally qualified candidate. The South Carolina high energy group currently pursues e^+e^- collider physics at KEK's TRISTAN ring using the AMY detector and an experiment on charmless two-body B^0 decays at Fermilab. The ongoing programs would welcome new members, but candidates with other research interests will also be considered. Applicants should submit a curriculum vitae and publications list, a statement of research interests, and the names of professional references to

**Prof. Frank T. Avignone, III,
Chairman,
Department of Physics and
Astronomy
University of South Carolina
Columbia, SC 29208**

The University of South Carolina is an Affirmative Action / Equal Opportunity employer and solicits applications especially from qualified women and minorities.



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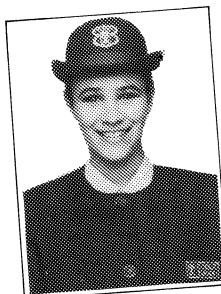
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