

EDITORIAL

The detectors at the LEP e^+e^- collider have all been upgraded and optimized for the last phase of LEP200. This will be dedicated to searches for new particles and new physics, and will take us just beyond the year 2000. The highest energy proton collider so far, the FNAL Tevatron, is currently being upgraded as are the experiments in order to maximize the discovery potential. So far the HERA $e-p$ facility has been limited by low luminosity mostly to forward physics, but the problem should be overcome shortly and in addition a dedicated B experiment is planned for the end of next year.

The next large accelerator on the high-energy frontier, the LHC, will probably only be ready for experiments in 2005. The large R&D programme, started already several years ago to construct the major detectors, is not finished yet and in many cases the choice between different detection techniques has not been finalized. The major detectors, ATLAS and CMS, are quite complex and comprise thousands of physicists scattered in hundreds of laboratories worldwide: this could give rise to serious communication problems if it were not for cheap Web-based techniques. Future accelerators will consist of several factories at low energy (e.g. DAFNE, PEP-II, Cornell), with detectors designed for the study of CP violation in the $K-\bar{K}$ and in the $B-\bar{B}$ systems, which are being actively constructed at the moment. Neutrino detectors will continue to be operated and will perhaps be enlarged in an attempt to pin down ν -oscillations in the leptonic sector.

High-energy physicists are now showing more and more interest in underground physics, solar ν 's and ν astrophysics, cosmic γ -rays detection and experiments in space, where fundamental questions concerning the existence of antimatter in the universe remain unanswered. Last, but by no means least, the long awaited detection of gravitational waves is being attacked by novel detectors.

Most of these themes were touched upon during the four-day 6th San Miniato Topical Seminar on Experimental Apparatus for High-Energy Particle Physics and Astrophysics, which took place in May 1996 in the Conference Centre "I Cappuccini" of the Cassa di Risparmio di San Miniato, a beautiful old monastery in the Tuscan countryside, renovated and transformed into a meeting centre. The programme of the conference comprised about sixty talks, covering advanced technologies for particle physics experiments. The meeting was attended by about 70 physicists, representing 30 laboratories and coming from 10 different countries, and also some representatives from industries.

The Seminar was sponsored and supported by the Italian Institute for Nuclear Physics (INFN), the Universities of Bologna and Florence, the Regione Toscana, the Cassa di Risparmio di San Miniato and the Electronics and Instrumentation Firm CAEN. We would like to thank the sponsoring institutions who rendered the meeting possible and in particular Prof. L. Maiani, President of the INFN, Prof. A. Forino, Director of the Physics Department of the University of Bologna, Prof. F. Roversi-Monaco, Rector of the University of Bologna, Prof. F. Barocchi, Director of the Physics Department of the University of Florence, Prof. P. Blasi, Rector of the University of Florence, Mr. V. Chiti, President of the Regione Toscana, and Avv. C. Franci, President of the Cassa di Risparmio di San Miniato. We would like to thank most warmly the secretaries of the meeting and all the people who helped us with the organization and during the meeting, Ms. M. Boldini, Ms. S. Cappelli, Ms. S. Sciarrino and Mr. S. Zagato. Our final thanks go to all the speakers for the quality of their contributions and to all the participants for their enthusiasm which greatly contributed to the success of the meeting.

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