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Editorial

Apart from the known and the unknown, what else is there?
Harold Pinter (b. 1930)
Eigentlich weiss man, nur wenn man wemig weiss, mit dem Wissen wchst der Zweifel.
Johann Wolfgang von Goethe (1749–1832), Spruche in Prosa

Astroparticle physics is fluorishing. Large facilities, such as Auger, are being commissioned and are on the verge of studying high-energy cosmic rays around the Greisen-Kuzmin-Zatsepin bound. While waiting for the ISS, circumpolar balloons are flying more and more often with improved detectors. Deep under the sea and under ice experimental neutrino astronomy is developing quite rapidly. A number of experiments (Amanda, Icecube, Antares etc.) are currently analysing or starting to take data.

The highest energy machine, the Tevatron collider at Fermilab, is running with substantially increased luminosity. The next large accelerator on the high-energy frontier, the LHC p-p and ion-ion collider at CERN, will be ready for experiments in the middle of 2008. The construction of the LHC experiments is almost finished and the installation is proceeding well. Interest is now shifting towards the data analysis software, and detector developers are already facing the challenges of the SuperLHC at higher energy and luminosity, which could start running perhaps in 2015. In summer 2006 the CNGS neutrino beam to Gran Sasso was successfully commissioned and the OPERA experiment started taking the first beam data. Several e^+e^- factories at lower energy (DAFNE, PEP-II, KEK), with detectors designed for the study of CP violation in the K–$\overline{\text{K}}$ and in the B–$\overline{\text{B}}$ systems, continue to take data, and ambitious projects for bulding a Super B factory are being discussed. With respect to e^+e^- at high-energy, the design of a superconducting International Linear Collider, a truly global machine, is making progress and the machine could be running in 2025, or earlier, if adequate funding is provided.

The 10th Topical Seminar on Innovative Particle and Radiation Detectors focused on advanced technologies in particle physics at collider experiments and in cosmic ray astrophysics experiments, with the emphasis on their increasing applications in other fields, in particular medicine and biology, and on the need for detailed detector simulation and new computing strategies. The main topics covered by the conference were: tracking detectors; calorimeters; detectors for X and γ-ray astrophysics; cosmic ray experiments in space, on the earth's surface, and underground; neutrino experiments; radiation-hard detectors and electronics; detectors for medicine and biology; large X-ray systems for security control; simulations and new computing methods. This was also the 20th Topical Seminar, in a series of conferences started in 1984 in San Miniato, which includes several subseries, namely on detectors, physics results and software. The four-day Seminar took place in October 2006 in the Auditorium of the Santa Chiara College of the University of Siena. The conference programme, addressing most of the topics, comprised 97 talks and 18 posters. Several review talks summarized the progress of complex projects and major facilities, shorter talks and posters covered contributions on specific items. The meeting was attended by about 130 physicists, representing more than 70 laboratories and coming from 16 different countries, and also by several representatives from european industry. The conference was followed by a short GEANT4 tutorial workshop, lasting two half days, which was attended by about 25 participants.

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Editors