

PREFACE

The exploration of the subnuclear world is done through increasingly complex experiments covering a wide range of energy and performed in a large variety of environments going from particle accelerators, underground detectors up to satellites and space laboratory. The achievement of these research programs calls for novel techniques, new materials and new instrumentation to be used in detectors, often of large scale. Therefore, particle physics is at the forefront of technological advance and also leads to many applications. Among these, medical applications have a particular importance due to health and social benefits they bring to the public. The International Conference on Advanced Technology and Particle Physics is held every two years. The Conference held during the week 8-12 October 2007 at the "Centro di Cultura Scientifica A. Volta" was the Tenth Edition and again welcomed a large participation. There were about 290 participants representing 130 institutions from 28 countries. The Participants were experienced researchers but also graduate students and recent postdoctoral fellows, students receiving financial support from the Conference organization.

The conference allows a regular review of the advances made in all technological aspects of the experiments at various stages, data taking, upgrade or in preparation. The open and flexible format of the Conference is conducive to fruitful exchanges of points of view among participants, permits the measure of the progresses made and indicate research directions.

The medical sessions gave an interesting example of merging advanced technology, particle physics and numerical techniques. Industries specialized in advanced technologies were present at the Conference through a show of their products (organized by M. Barone and A. Gaddi).

Plenary and parallel sessions covered Advanced Detectors and Particle Identification (organized by E. Nappi and J. Seguinot), Astroparticle Physics and Underground Experiments (organized by A. Capone and R. Wischnewski), Space Experiments (organized by S. Volonté), Heliosphere and Earth Magnetosphere (organized by K. Kudela), Calorimetry (organized by C. Leroy), Software Applications (organized by P. Binko and S. Giani), High Energy Physics Experiments (organized by L. Price), Accelerator and Computer Data/Networking Developments (organized by R. Ruchti), Medical Application Instrumentation (organized by S. Pospisil), Radiotherapy and Medical Imaging (organized by V. Sossi), Radiation Damage (organized by S. Baccaro) and Tracking Devices (organized by D. Abbaneo). The organization of the Industry Participation was done by M. Barone and A. Gaddi. Four afternoons afforded parallel poster sessions, including one session of poster presentation. The poster sessions have always received special attention by the organizers of the conference. These sessions were organized by V. Hagopian. The number of posters accepted, more than 70, shows the great success of these sessions. The dedication of several rooms to the poster sessions allowed numerous discussions by various interested parties. The posters were divided into three general categories as follows: 1.

Astroparticle, Underground Experiments, Space Physics and Cosmic Rays. 2. High-Energy Physics Experiments, Trackers, Calorimetry, Software and Data Systems. 3. Advanced Detectors and Medical Physics Applications. Each poster submission was reviewed for relevance to the conference and accepted or rejected. The final poster papers accepted for publications have been included in the appropriate section of the Proceedings, as function of their topic. From the quality of the material of the posters, as well as the poster presentation, it is clear that a lot of effort went into the preparation of each presentation. We would like to thank the poster presenters for their fantastic effort that made the posters a truly important part of this Conference.

We would like to thank the staff of the Centro A. Volta for the excellent support provided to the Conference organization at Villa Olmo. In particular, we would like to extend our appreciation and thanks to the Secretariat of Centro di Cultura Scientifica A. Volta for their help and efficiency with the organization of the Conference and its running. We are particularly indebted to Dr G. Castiglioni, President of Univercomo, who by providing sponsorship allowed the Conference organizers to largely reduce or waive the registration fees for the graduate (MSc and PhD) students.

The organizers would like to thank the strong support of INFN and ESA which made the conference possible.

Finally, we would like to thank the speakers for the high quality of their contributions and the participants for their enthusiasm in attending the Conference and contributing to the discussions.

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