

Preface

A. TRICOMI⁽¹⁾(²)(³) and D. ZAPPALÀ⁽²⁾(³)

⁽¹⁾ *Dipartimento di Fisica e Astronomia, Università di Catania - Catania, Italy*

⁽²⁾ *INFN, Sezione di Catania - Catania, Italy*

⁽³⁾ *Centro Siciliano di Fisica Nucleare e di Struttura della Materia (CSFNMSM) - Catania, Italy*

received 13 February 2024

The XIX edition of the IFAE meeting (Incontri di Fisica delle Alte Energie) was jointly organized by the Catania INFN Unit, the Physics and Astronomy Department “Ettore Majorana” of the Catania University and the “Centro Siciliano di Fisica Nucleare e di Struttura della Materia”, on 12th–14th April 2023, after a three-year stop imposed to prevent the spreading of COVID-19 pandemic. It took place in the Auditorium “G. De Carlo” of the Monastery of San Nicolò l’Arena in Catania, a late baroque (XVI century) monument and one of the biggest Benedictine monastery in Europe, inscribed in the UNESCO World Heritage Site list since 2002.

The IFAE Conference started with the opening address of the Rector of the University of Catania, Prof. Francesco Priolo, followed by the Director of the DISUM Department, Prof. Marina Paino, who kindly made the splendid location of the Benedictine Monastery available, and by Prof. Alessia Tricomi, chair of the conference.

In the opening session, Michelangelo Mangano (CERN) presented the current status and the future of High-Energy Physics at LHC, while the talk of Giuliana Fiorillo (Università Federico II, Napoli) dealt with the direct detection of dark matter. Then, during the three days of the meeting, which counted about 150 participants, more than 60 oral presentations grouped in the four traditional sessions (*Cosmology and Astroparticles*, *Energy Frontier*, *Intensity Frontier*, and *New Technologies*) were delivered and more than 50 posters were presented. According to the spirit of the IFAE annual meeting, the speakers were mostly young researchers or PhD students. Finally, the concluding talks were given by Michele Punturo (INFN Perugia) on the Einstein Telescope and by Pierluigi Campana (Giunta Esecutiva INFN) on the role of INFN in the European Strategy for Particle Physics.

On the occasion of the closing remarks, given by Prof. Tricomi, the winners of the IFAE awards have been announced: Isabella Garzia (University of Ferrara), for the best overall oral communication at the conference, and, respectively, Filippo Bramati (University and INFN of Milan Bicocca) for the best oral communication at the Astroparticles and Cosmology Session, Stefano Ghislandi (GSSI l’Aquila) for the New Technologies Session, Gabriele Martelli (University and INFN of Perugia) for the Intensity Frontier Session, Giuseppe Piparo (University and INFN of Catania) for the Energy Frontier Session. Finally, Claudio Brugnoli (University and INFN of Perugia) was awarded for the best poster communication.

First, we would like to warmly thank all members of the Local Organizing Committee for promptly taking care of the organizational aspects of this meeting: S. Albergo, A. Di Mattia, C. Distefano, A. Lapertosa, S. Plumari, A. Tricomi, D. Zappalà; and especially the secretariat: Livio Caruso, Micaela Colombo, Letizia Giuffrida, Cettina Lombardo, Annalinda Magrì and Ivan Sabister. A special thanks also to the students Mattia, Giulia, Raffaele and Carlo for their support during the conference sessions.

On the other hand, we are extremely grateful to all the speakers for their high-level presentations that were at the core of the success of the meeting and special thanks are likewise due to the conveners of the four sessions, for their care in selecting the talks and their successful effort in organizing and chairing the sessions: (Cosmology and Astroparticles) J. Casanueva, R. Munini, L. Pagnanini, A. Platania; (Energy Frontier) N. Bruscano, M. Chiesa, L. Soffi, N. Vignaroli; (Intensity Frontier) F. Ferrari, F. Giannuzzi, S. Martellotti, A. Pilloni; (New Technologies) D. Bersanetti, L. Pattavina, S. Terzo. Also, we want to express our gratitude to the members of the Scientific Committee for providing helpful advice and suggestions during the meeting.

Finally, we would like to acknowledge the support received from INFN, University of Catania, Centro Siciliano di Fisica Nucleare e di Struttura della Materia and from the CAEN S.p.A. company.