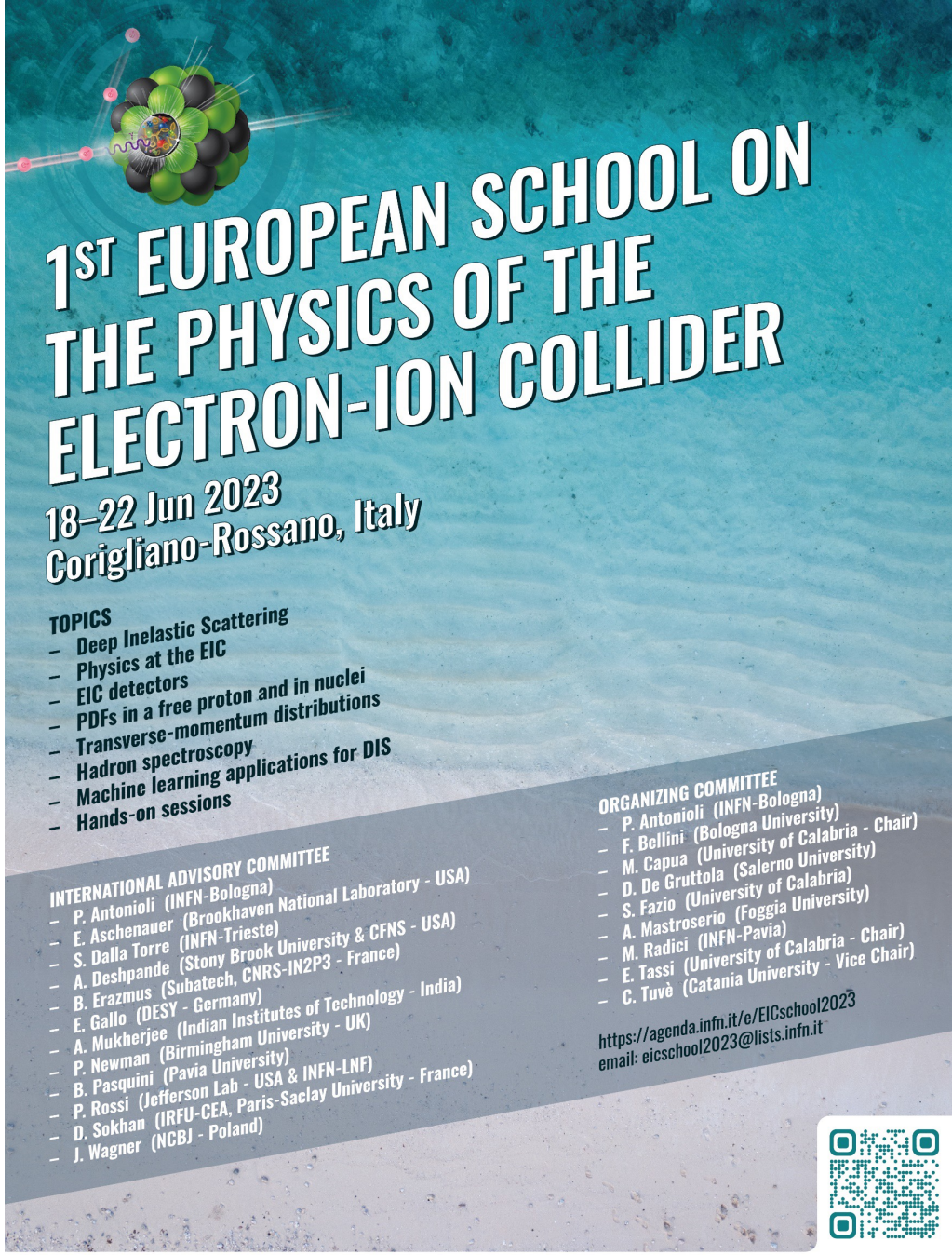
First European School on the Physics of the Electron-Ion Collider

E. Tassi and M. Capua on behalf of the LOC

https://agenda.infn.it/event/33450/

Motivation

- The EIC will play an essential role in our understanding of QCD and the structure of nucleons and nuclei. It is very important to introduce and train a new generation of physicists to its physics programme.
- Early 2022 the idea developed to organize an EIC Summer school in Italy featuring lectures and tutorials on theoretical and experimental topics related to the physics of the EIC.
- An EIC summer school exists since 2019 in USA and it is organized by the Center for Frontiers in Nuclear Science (CFNS - Stony Brook) but given the large European commitment in the EIC project we believe it is useful to have a companion summer school also in Europe.
- The school is intended for advanced graduate students and postdocs in nuclear and particle physics. Although in the first edition is organized by the Italian members of the EIC Users Group our aim is to promote it into an international European school.



Committes

Local Organizing Committee

- Pietro Antonioli (INFN-Bologna)
- Francesca Bellini (U. di Bologna and INFN-Bologna)
- Marcella Capua (U. della Calabria and INFN-Cosenza) (chair)
- Daniele De Gruttola (U. di Salerno and INFN-Salerno)
- Salvatore Fazio (U. della Calabria and INFN-Cosenza)
- Annalisa Mastroserio (U. di Foggia and INFN-Bari)
- Marco Radici (INFN-Pavia)
- Enrico Tassi (U. della Calabria and INFN-Cosenza) (chair)
- Cristina Tuvè (U. di Catania and INFN-Catania) (vice-chair)

International Advisory Committee

- Pietro Antonioli (INFN-Bologna)
- Elke Aschenauer (BNL - USA)
- Silvia Dalla Torre (INFN-Trieste)
- Abhay Deshpande (Stony Brook Univ. and CFNS - USA)
- Barbara Erazmus (Subatech, CNRS-IN2P3 - France)
- Elisabetta Gallo (DESY - Germany)
- Asmita Mukherjee (IIT Mumbay - India)
- Paul Newman (Univ. Birmingham - UK)
- Barbara Pasquini (Univ. Pavia and INFN-Pavia)
- Patrizia Rossi (JLab - USA and INFN-LNF)
- Daria Sokhan (IRFU-CEA, Univ. Paris-Saclay - France)
- Jakub Wagner (NCBJ - Poland)

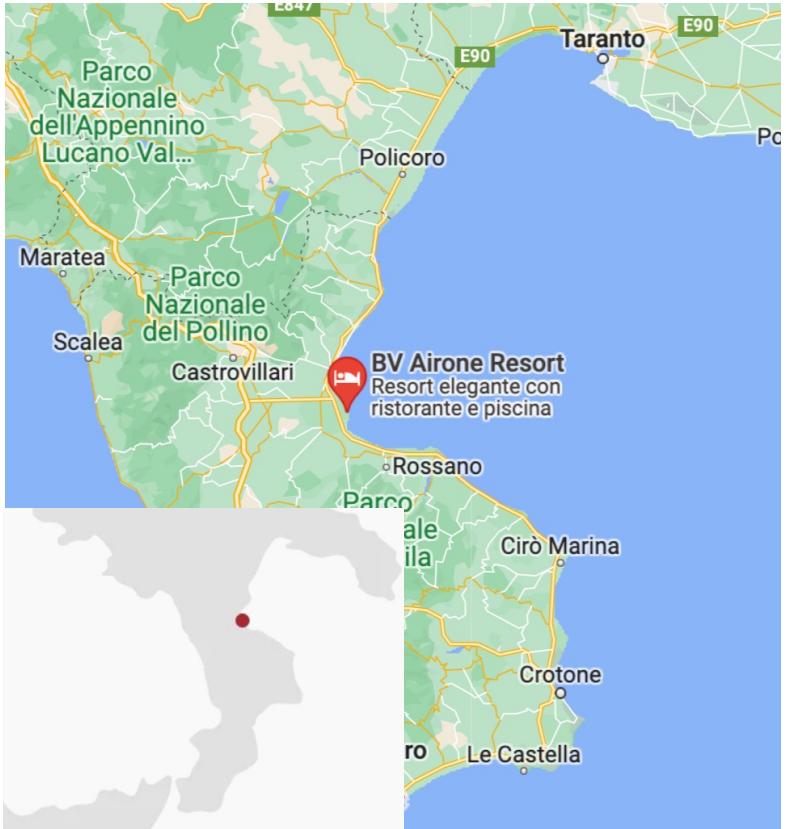
A special thank to the members of the LOC and IAC for their inputs and work

Sponsoring Institutions

School's Venue

The EIC School took place June, 18-22 at the BV Airone Resort in Corigliano-Rossano (Cosenza).

Few meters away from the Ionian sea, in the village of Corigliano-Rossano (on the Eastern coast of Calabria) a splendid example of a medieval historical center, an ideal place to start exploring a territory full of naturalistic, historical, and archaeological treasures.



Ducal castle of Corigliano

Video Wiki

BV Airone Resort

Archaeological Park of Sibari

Codex Purpureus Rossanensis

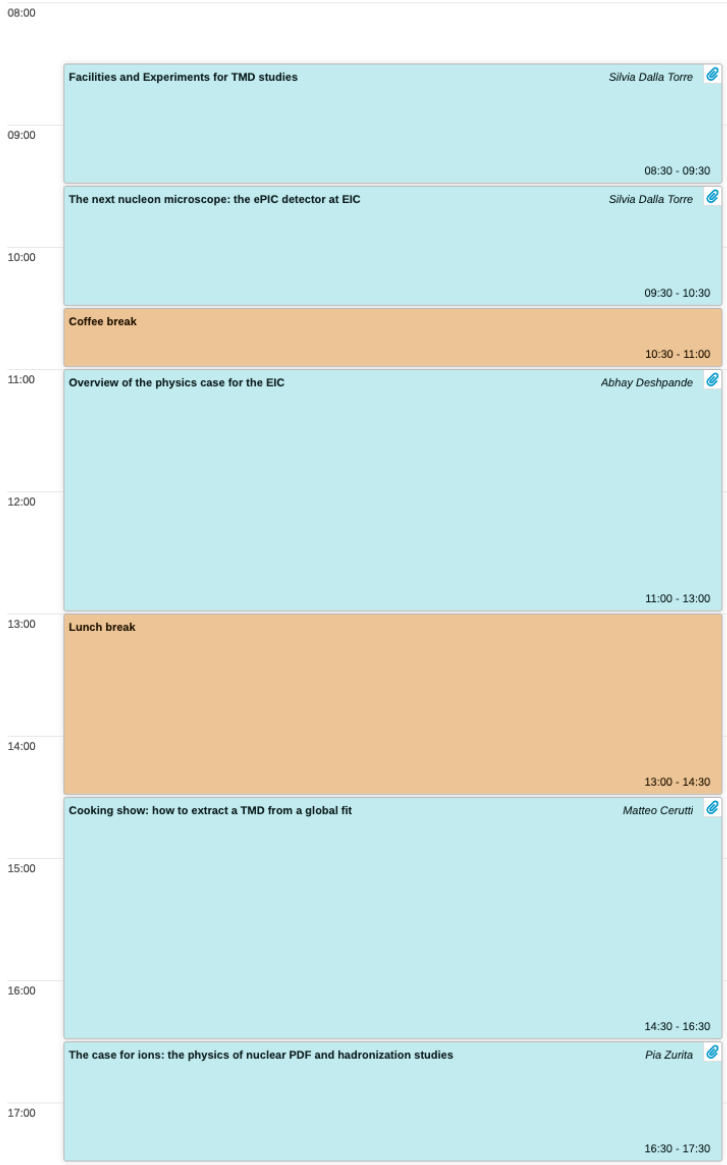
Scientific Program

Refer to:
https://agenda.infn.it/event/33450/

Sun 18/06

Mon 19/06

Tue 20/06



Scientific Program

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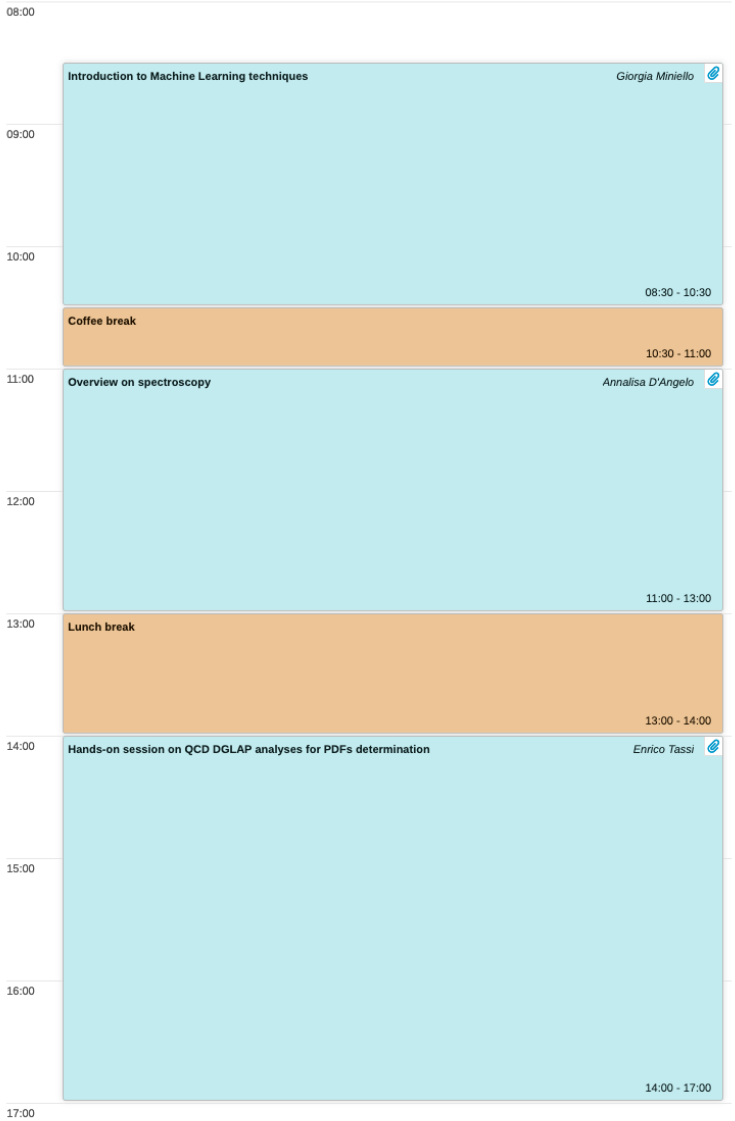
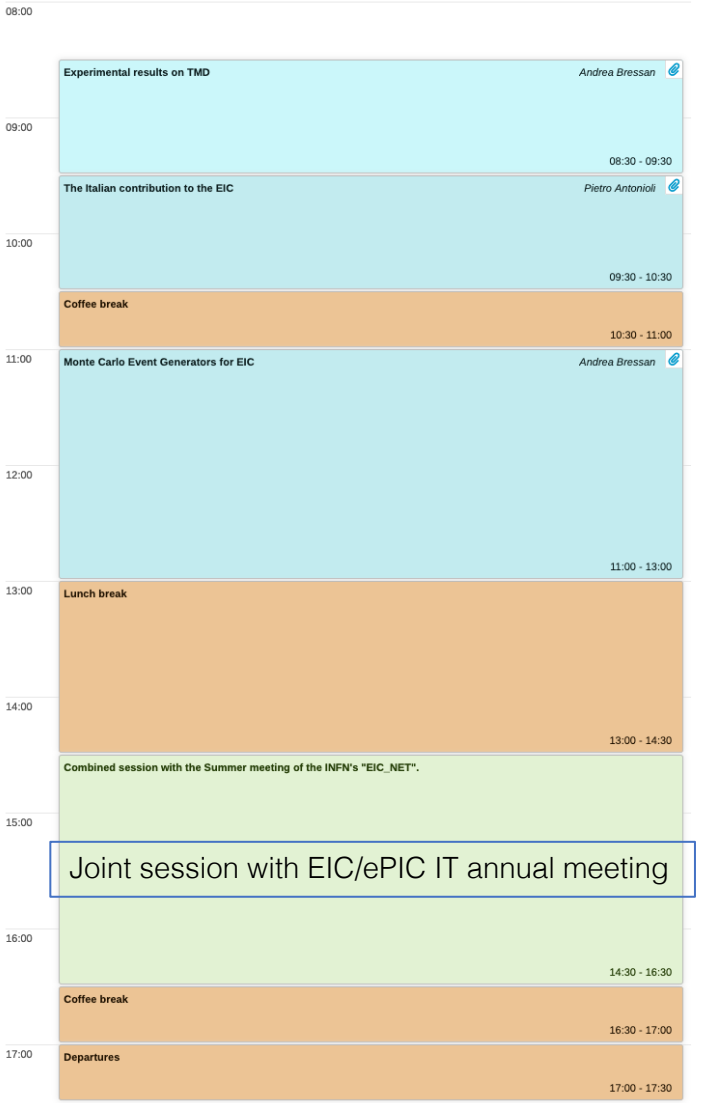
Wed 21/06



Thu 22/06



Joint session with EIC/ePIC IT annual meeting

Scientific Program

Refer to:
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Scientific Topics

- The Electron-Ion Collider: From an idea to reality
- Introduction to Deep Inelatic scattering and collinear PDFs (with Hands-on session)
- Theory of TMD distributions and gluon TMDs
- Experimental results on TMDs
- Cooking show: how to extract TMDs from a global fit
- The case for Ions: the Physics of nuclear PDFs and hadronization studies
- Overview of the Physics case for the EIC
- Overview on Spectroscopy
- Introduction to Machine Learning Techniques
- Monte Carlo Event Generators for EIC
- The ePIC Detector
- The Italian contribution to EIC

Lecturers

- Pietro Antonioli (INFN - Bologna)
- Alessandro Bacchetta (Pavia University and INFN)
- Andrea Bressan (Trieste University and INFN)
- Francesco G. Celiberto (FBK - Trento)
- Matteo Cerutti (Pavia University and INFN)
- Silvia Dalla Torre (INFN - Trieste)
- Annalisa D'Angelo (Tor Vergata University and INFN)
- Abhay Deshpande (Stony Brook University and CFNS - USA)
- Enrico Tassi (University of Calabria, INFN - Cosenza)
- Giorgia Miniello (INFN - Bari)
- Pia Zurita (Regensburg University - Germany)

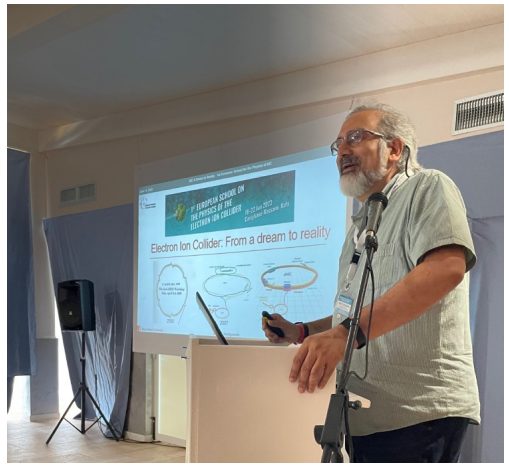
School's Numbers

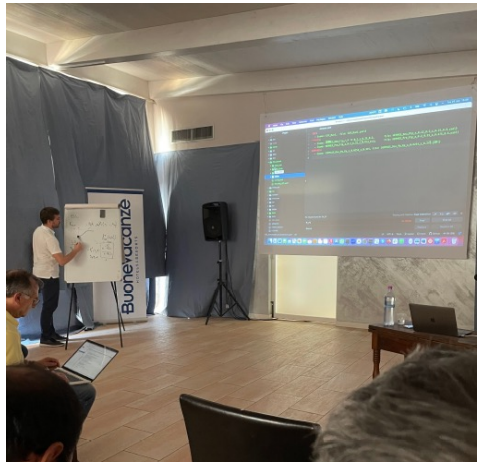
- 27 Students (9 Female - 33%)
- 1/3 non italian students (although a few working with italian institutes)
- Active participation during the lectures and in the discussion sessions
- Lively poster night session

Our first impression is that of a very positive reponse by the students
(will run students' satisfaction survey)

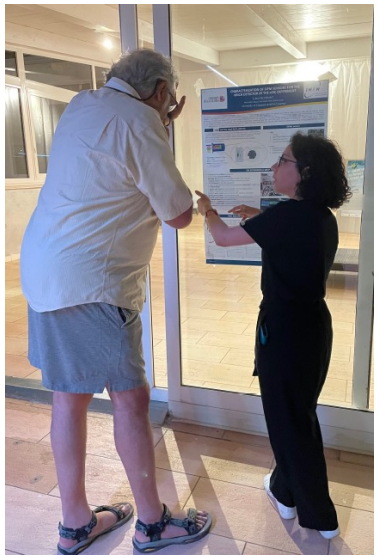
We will discuss the results within the LOC and with the IAC

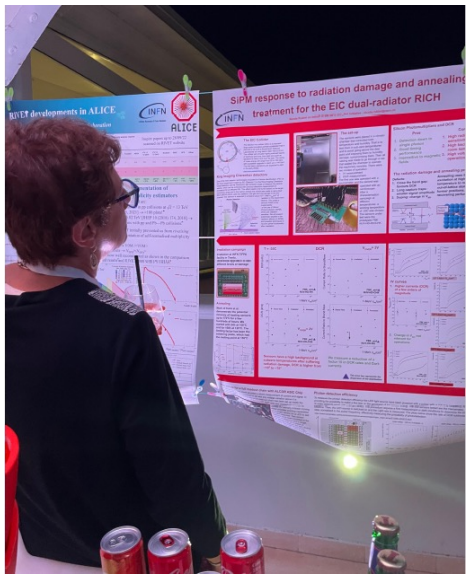
Pictures: Lectures





Pictures: Poster Session





Pictures: Life

Summary

- Contribute to an International effort to promote EIC Science amongst young generations

- First European School on the Physics of the EIC proved very successful

- Larger participation from other European countries important

- Move from here to try to transform this EU school into a regular training event