Theo4Exp EUROLABS Hands-on Workshop

Theory Service for the Nuclear Physics Community
July 7 − 9, 2025, ECT*, Trento, Italy

Program of the Meeting

Monday, July 7, 2025

9:20 – 9:35
Welcome address by the ECT* Director

9.35 – 9:45
Opening Session: Theo4Exp – Idea and functioning

MORNING SESSION 1 – MeanField4Exp and Physics Behind
Chair: **Gianluca Colò** (University of Milano and INFN, Italy)

9:45 – 10:45
Jerzy Dudek (IPHC, Strasbourg, France; IFJ, Cracow, Poland):
Realistic Phenomenological Nuclear Mean Field Theory: Physics Background for Experimentalists

10:45 – 11:15 Coffee break

11:15 – 11:45
Jerzy Dudek (IPHC, Strasbourg, France; IFJ, Cracow, Poland):
MeanField4Exp. Examples of service applications: Single nucleon energies in deformed nuclei

11:45 – 12:15
Kasia Mazurek (IFJ, Cracow, Poland):
MeanField4Exp. Examples of service applications: Macroscopic-Microscopic Method (MMM)
for potential energy calculations in the user chosen formats

12:15 – 12:45
Adam Maj (IFJ, Cracow, Poland):
MeanField4Exp. Examples of service applications: Nuclear shape evolution with spin, impact on the
Giant Dipole Resonance Strength – comparison with experiment

12:45 − 14:00 Lunch break

AFTERNOON SESSION 2
Conveners: **Adam Maj and Kasia Mazurek** (IFJ, Cracow, Italy)

14:00 – 16:00 *Hands-on practice on the Mean4Exp platform*

16:00 – 16:30 Coffee break

16:30 – 18:00 *Hands-on practice on the Mean4Exp platform. Final discussion, feedback on the platform*

Tuesday, July 8, 2025
MORNING SESSION 3 – Reaction4Exp and Physics Behind
Chair: **Adam Maj** (IFJ, Cracow, Poland)

9:00 – 10:00
Antonio Moro / José Antonio Lay (Universidad de Sevilla, Spain): *Optical Model and Inelastic Scattering*

10:00-10:30 Coffee break

10:30-11:30 **Mario Gómez-Ramos** (Universidad de Sevilla, Spain): *Transfer reactions and Coulomb Breakup*

11:30-12:30 **Carla T. Muñoz-Chimbo** (FIUS-Universidad de Sevilla, Spain): *Do you know how to use the Reaction4Exp platform?*

12:30 – 14:00 Lunch break

AFTERNOON SESSION 4
Convener: **Manuela Rodríguez-Gallardo** (Universidad de Sevilla, Spain)

14:00 – 16:00 *Hands-on practice on the Reaction4Exp platform*

16:00 – 16:30 Coffee break

16:30 – 18:00 *Hands-on practice on the Reaction4Exp platform. Final discussion, feedback on the platform*

Wednesday July 9, 2025
MORNING SESSION 5 – Structure4Exp and Physics Behind
Chair: **Manuela Rodríguez-Gallardo** (Universidad de Sevilla, Spain)

9:00 – 10:00
Gianluca Colò / E. Vigezzi (University of Milano and INFN, Italy): *Nuclear Density Functional Theory for ground-state and collective excitations*

10:00-10:30 Coffee break

10:30-11:30 **Angela Gargano** (INFN Napoli, Italy): *The realistic shell model and the KSHELL implementation*

11:30-12:30 **I. Moumene** (University of Bratislava, Slovakia): *Do you know how to use the Structure4Exp platform?*

12:00 – 14:00 Lunch break

AFTERNOON SESSION 6
Convener: **Gianluca Colò** (University of Milano and INFN, Italy)

14:00 – 16:00 *Hands-on practice on the Structure4Exp platform*

16:00 – 16:30 Coffee break

16:30 – 18:00 *Hands-on practice on the Structure4Exp platform. Final discussion, feedback on the platform*