

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

9:00 – 9:10

Opening Session: Theo4Exp – Idea and functioning

MORNING SESSION 1 – MeanField4Exp and Physics Behind

Chair: **Gianluca Colò** (University of Milano and INFN, Italy)

9:10 – 10:10

Jerzy Dudek (IPHC, Strasbourg, France; IFJ, Cracow, Poland):

Realistic Phenomenological Nuclear Mean Field Theory: Physics Background for Experimentalists

10:10 – 10:40 Coffee break

10:40 – 11:10

Jerzy Dudek (IPHC, Strasbourg, France; IFJ, Cracow, Poland):

MeanField4Exp. Examples of service applications: Single nucleon energies in deformed nuclei

11:15 – 11:45

Kasia Mazurek (IFJ, Cracow, Poland):

MeanField4Exp. Examples of service applications: Macroscopic-Microscopic Method (MMM) for potential energy calculations in the user chosen formats

11:50 – 12:20

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

12:30 – 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*