TALENT Course on Few-body methods and nuclear reactions

A TALENT course (see below) on Few-body methods and nuclear reactions will take place at ECT* (European Center for Theoretical Nuclear Physics and Related Areas) in Trento from July 20 to August 7, 2015.

The organizers of the course are Alejandro Kievsky (INFN Pisa) and Giuseppina Orlandini (Univ. of Trento). Together with Nir Barnea (Univ. of Jerusalem), Mario Gattobigio (INLN Nice), Rimantas Lazauskas (IPHC Strasbourg) and Andreas Nogga (FZ Juelich), they will alternate as lecturers and tutors for the exercises.

The course aims at understanding the basic ingredients of the methods used to solve the quantum mechanical fewbody problem. At the end of the course the student should be able to solve numerically the many-body Schroedinger equation for bound and scattering states and therefore to calculate observables and perform comparisons to experimental data. The student will make contact with the numerical techniques and programming languages used by experts in solving the few-nucleon problem.

The course is designed to be accessible both to theoretically and experimentally inclined students and in general to those who would like to experience the ab initio approach to quantum mechanics.

Prospective student participants are expected to be familiar with basic quantum mechanics and a computer language.

Registration is now open. The maximum number of participants will be 25, at most 20 of which can receive full local support. Processing and selection of students will be managed in agreement with the University of Trento.

The target groups are Master of Science, PhD students and early post-doctoral researchers. On request the University of Trento will certify the credit content of 7 CFU to those who will have followed the course with profit. More experienced researchers may apply, but will be considered only if numbers and space permit.

Applications should be submitted electronically through the ECT* website and should include curriculum vitae, a description of academic and scientific achievements to date and a short letter expressing the applicant’s personal motivation for attending the course and a statement if local support is needed. In addition a reference letter from the candidate's

supervisor, addressed to “Professor Wolfram Weise, Director of ECT*”, should be sent by email to Susan Driessen. (driessen@ectstar.eu).

Deadline for applications: April 15, 2015.

What is TALENT?

The recently established initiative TALENT: Training in Advanced Low Energy Nuclear Theory (see also http://www.nucleartalent.org) aims at providing an advanced and comprehensive training to graduate students and young researchers in low-energy nuclear theory. The initiative, a multi-national network of several European and North American institutions, aims at developing a graduate program of excellence in low-energy nuclear theory. The graduate program is divided into 9 modules. Each module includes a series of lectures, commissioned from experienced teachers in nuclear theory, and focused on problem-based learning and hands-on experience.

The educational material generated under this program will be collected in the form of WEB-based courses, textbooks, workbooks and a variety of modern educational resources. The program will build a network of strong connections between universities, research laboratories and institutes worldwide, and provide a unique training resource to support the future needs of nuclear physics. Each course is planned to run full-time for three weeks and consists of about 50 hours of lectures, and as many of exercises. A project of additional 2 weeks (home)-work is assigned (and evaluated) to those who require certified credits. The total workload is approximately 170 hours, corresponding to 7 ECTS in Europe.