INTERNATIONAL SCHOOL OF SUBNUCLEAR PHYSICS
THE MOST UNEXPECTED AT LHC
AND THE STATUS OF HIGH ENERGY FRONTIER

47th Course – ERICE-SICILY: 29 AUGUST – 7 SEPTEMBER 2009
Sponsored by the: - Italian Ministry of Education, University and Scientific Research - Regional Government - Academies of Sciences of Estonia, Georgia, Lithuania, Russia and Ukraine - Chinese Academy of Sciences - Commission of the European Communities - European Physical Society - Italian National Committee for Nuclear Physics - Weizmann Institute of Science - World Federation of Scientists - World Laboratory

PROGRAMME AND LECTURERS

ORIGINATION
Get the LHC. Teach as a New Age of Discovery!
* Reports from ATLAS, CMS, D0, DELPHI Projects

HOT THEORETICAL TOPICS
- The Landscape and Cosmological Scenario Selection
- IPOSO: 50 Years of Particle Physics: Berkeley, CA, US
- The Beholder of N=8 Supergravity
- I. DROZD, NEC, Beijing, China
- Microscopic Black Holes, Entropy and Particle Species
- S. WATSON, KCL, London, GB
- From Vortices and Superfluids to String Theory
- D. P. DUTTA, Max-Planck Institute for Physics, Munich, DE
- To the Rise of Supersymmetry: NP Complete?
- A. A. DAVIES, Middlebury College, Rutland, VT, US
- Supersymmetry: Foundations and Applications
- D. MAEKAWA, KEK, Tsukuba, Japan
- Phenomenological TPQ
- N NARKIS, City College, New York, NY, US

SEMINARS AND SPECIAL TOPICS
- A Fraction of the Standard Model: Beyond NP
- The Fractional Theories of Phenomenology
- J. F. GROVER, Bay Area, CA, US
- Diffusion in a Ball and Virtual photons at High Energies: What will Higgs Do? 
- M. NAKAYAMA, HEP, Stanford, CA, US
- New Ideas in Supergravity and Modelling
- P. W. HIGGS, University of Edinburgh, Edinburgh, GB
- Status of Dark Matter and Neutrino Physics
- I. S. BERTOLUCCI, INFN, Padova, Italy
- Electroweak Measurements and Structure Factor
- M. NAKAYAMA, HEP, Stanford, CA, US
- Status of Black Holes Physics
- J. S. HORNBACK, University of Tokyo, Japan
- Complexities and Foundations in Quantum Physics: Complexity and Quantum Physics
- A. V. ZAMBIAZZI, University of Bologna, Italy
- A Quark in ALL:

HOW COSMOLOGY AFFECTS SUBNUCLEAR PHYSICS
- J. VERNES, Stanford University, CA, US
- D. M. FALLARO, University of Salerno, Italy
- A. H. ZELENY, Stanford University, CA, US
- M. H. WAMPLER, University of Chicago, IL, US

THE DIGITAL VERSUS PHYSICAL WORLD
- D. W. KELLY, Stanford University, CA, US
- THE DIGITAL WORLD: FROM PHYSICS TO CYBERSPACE
- W. HIGGS, University of Edinburgh, Edinburgh, GB
- THE PHYSICAL WORLD: FROM CYBERSPACE TO PHYSICS
- M. NAKAYAMA, HEP, Stanford, CA, US

SPECIAL ACHIEVEMENTS
- J. VERNES, Stanford University, CA, US
- D. M. FALLARO, University of Salerno, Italy
- A. H. ZELENY, Stanford University, CA, US
- M. H. WAMPLER, University of Chicago, IL, US
- W. HIGGS, University of Edinburgh, Edinburgh, GB
- M. NAKAYAMA, HEP, Stanford, CA, US

ONE OF THE MAINS OF THE SCHOOL is to encourage and promote young physicists to achieve recognition at an international level. A worldwide competition is open to select New Talents. Young fellows who think they have the ability to compete are invited to apply. At the end of the School twenty projects will be selected in the fields of the New Talents to be presented by the Extramural Committees appointed by the Lecturers and the Italian National Committee for Nuclear Physics. These Committees will decide on the Best Talent and on the winners of the competition open for the less problems. The solutions will be presented at the Special Session of the School.

VICTOR MEDALLIST CONFERENCE FUND: The WIDER EDUCATION OF SCIENTISTS (WES) has established this fund to support young students so that they can attend workshops and summer schools. The students must apply for financial support which should be applied for the band and the hotel and the flights. Applicants should request the application form from WES. The application will be assessed by the Scientific Committee of the School. The successful applicants will be selected on the basis of their academic record and the paper submitted. The criteria for selection will be: the interest in the topic, the potential for the student, and the quality of the paper.

BOARD OF LECTURERS AND EXTRAMURAL COMMITTEES: In addition to the Members of the School, distinguished guest physicists are invited to contribute to the lively intellectual atmosphere of the School by participating in the Discussions following the Lectures. Lectures and lectures will be taken in part by invited guest physicists.

BOARD OF EXTRAMURAL COMMITTEES: The Board of Extramural Committees will meet at the end of the School and will select the best projects. The projects will be ranked on the basis of "scientific excellence," without taking into geographical distribution. The Lecturers of the School and the University of Salerno, Italy, will give the names of other experienced or theoretical nature, especially of the candidates who made an important contribution to the results to be presented. A review paper has been prepared and, as before, will only be selected if the candidate can point out some new features in the final version. These papers will be presented at the end of the School by the Board of Extramural Committees.

DIPLOMATES FOR THE SCHOOL:
The following Diplomates have been established in honor of and named after the lecturers:
- M. NAKAYAMA
- S. I. ROBERTSON
- W. HIGGS
- A. V. ZAMBIAZZI

PRACTICAL TOUCH
According to legend, Erice, son of Venus and Neptune, founded the small town of Erice on a mountain (750 meters above sea level) near three thousand years ago. The founder of modern history - the founding of Europe in the 19th century of the United Nations - is the 1941 shooting of Erice by a group of British soldiers, commanded by General Duff Cooper, who were part of the last Allied troops to escape from the German forces. The city of Erice is known for its beautiful views of the surrounding mountains, its rich cultural heritage, and its delicious local cuisine. The town is also home to the Erice International Festival, which features a variety of events and performances throughout the year. The festival, which takes place every year, celebrates the rich cultural heritage of the region and draws thousands of visitors from around the world. The festival includes a variety of events, such as concerts, theatre performances, and exhibitions, as well as a series of workshops and masterclasses. The festival is a celebration of the rich cultural heritage of the region and a reminder of the importance of preserving this important aspect of Italian culture. More information on the festival can be found on the official website: http://www.ericefestival.com

G. ZICHENI
CO-DIRECTOR OF THE COURSE
A. ZICHENI
DIRECTOR OF THE SCHOOL