



«ETTORE MAJORANA» FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE  
TO PAY A PERMANENT TRIBUTE TO GALILEO GALILEI, FOUNDER OF MODERN SCIENCE  
AND TO ENRICO FERMI, THE "ITALIAN NAVIGATOR", FATHER OF THE WEAK FORCES



# INTERNATIONAL SCHOOL OF RADIATION DAMAGE AND PROTECTION

## *11th Course: OPERATIONAL RADIATION PROTECTION FOR ACCELERATORS IN RESEARCH AND MEDICINE*

**ERICE-SICILY: 13 – 21 MAY 2009**

Sponsored by the: • Italian Ministry of Education, University and Scientific Research • Sicilian Regional Government

### PROGRAMME AND LECTURERS

#### *From Low Dose Research to Operational Radiation Protection*

• H.G. MENZEL, CERN, Geneva, CH

#### *Operational Radiation Protection in High Energy Physics Accelerators Implementation of ALARA in Design and Operation of Accelerators*

• S.H. ROKNI, SLAC, Menlo Park, CA, US

#### *Operational Radiation Protection in Synchrotron Light and Free Electron Laser Facilities*

• J. LIU, SLAC, Menlo Park, CA, US

#### *Operational Radiation Protection Issues Specific for High Intensity Beams*

• H. NAKASHIMA, JAEA, Tokai, JP

#### *Practical Implementation of Optimization in Radiation Protection*

• J. LOCHARD, CEPN, Fontenay-aux-Roses, FR

#### *Safety Systems*

• V. VYLET, JLAB, Newport News, VA, US

#### *Medical and Biological Aspects for the Use of High Energy Accelerators in Radiation Therapy*

• H. TSUJII, NIRS, Chiba, JP

#### *Medical Physics Aspects of Particle Therapy*

• O. JAKEL, DKFZ, Heidelberg, DE

#### *Individual Dosimetry*

• C. WERNLI, PSI, Villigen, CH

#### *Environmental Management*

*Programs for the Evaluation of the Environmental Impact*

• P. VOJTYLA, CERN, Geneva, CH

#### *High Level Dosimetry*

• H. SCHÖNBACHER, CERN, Geneva, CH

#### *Simulation Calculations*

• A. FASSO, SLAC, Menlo Park, CA, US

#### *Radioactive Waste Management and Decommissioning*

• L. ULRICI, CERN, Geneva, CH

#### *Radiation Protection Training*

• P. WRIGHT, RAL, Didcot, UK

#### *Instrument Response in Complex Radiation Fields*

*Radiation Protection Constraints for Use of Accelerators in Medicine*

• S. AGOSTEO, Politecnico of Milan, IT

#### *Special lecture*

*Understanding and Characterisation of the Risks to Human Health from  
Exposures to low Level of Radiation*

• D. GOODHEAD, Medical Research Council, Harwell, UK

### PURPOSE OF THE COURSE

The use of accelerators in medicine research and industry continues to grow. Thus there is continuous need to update the knowledge of both professionals and newcomers. The course is focused on operational radiation protection, including environmental aspects, safety systems, training and radioactive waste management. Particular aspects of operational radiation protection at high-energy accelerators and hadron therapy facilities include the potential of exposing relatively large number of people to ionizing radiation, the size of the facilities and the vast energy range and complexity of the radiation fields. Emphasis is given to all aspects of practical implementation of the principles of operational radiation protection at such facilities. The Course will provide a series of presentations given by acknowledged experts with practical experience in the field. There will be ample opportunity for in-depth discussions on current problems.

### APPLICATIONS

Interested participants should send a letter to one of the Directors of the Course:

Dr Luisa ULRICI  
CERN, Mail Box E06900  
CH-1211 GENEVA 23, CH  
e-mail: [luisa.ulrici@cern.ch](mailto:luisa.ulrici@cern.ch)

or

Dr Sayed H. ROKNI  
Stanford Linear Accelerator Center  
Mail Stop 48, 2725 Sand Hill Road – MENLO PARK, CA 94025, US  
e-mail: [rokni@slac.stanford.edu](mailto:rokni@slac.stanford.edu)

They should specify:

- date and place of birth together with present nationality;
- degree and other academic qualifications;
- present position and place of work;
- postal and e-mail address.

**Closing date for application: 28 February 2009**

#### • PLEASE NOTE

Participants must arrive in Erice on May 13, 2009, not later than 7 pm.

### POETIC TOUCH

According to legend, Erice, son of Venus and Neptune, founded a small town on top of a mountain (750 metres above sea level) more than three thousand years ago. The founder of modern history — i.e. the recording of events in a methodic and chronological sequence as they really happened without reference to mythical causes — the great Thucydides (~500 B.C.), writing about events connected with the conquest of Troy (1183 B.C.) said: «After the fall of Troy some Trojans on their escape from the Achaei arrived in Sicily by boat and as they settled near the border with the Sicilians all together they were named Elymi: their towns were Segesta and Erice.» This inspired Virgil to describe the arrival of the Trojan royal family in Erice and the burial of Anchise, by his son Enea, on the coast below Erice. Homer (~1000 B.C.), Theocritus (~300 B.C.), Polybius (~200 B.C.), Virgil (~50 B.C.), Horace (~20 B.C.), and others have celebrated this magnificent spot in Sicily in their poems. During seven centuries (XIII-XIX) the town of Erice was under the leadership of a local oligarchy, whose wisdom assured a long period of cultural development and economic prosperity which in turn gave rise to the many churches, monasteries and private palaces which you see today.

In Erice you can admire the Castle of Venus, the Cyclopean Walls (~800 B.C.) and the Gothic Cathedral (~1300 A.D.). Erice is at present a mixture of ancient and medieval architecture. Other masterpieces of ancient civilization are to be found in the neighbourhood: at Motya (Phoenician), Segesta (Elymian), and Selinunte (Greek). On the Aegadian Islands — theatre of the decisive naval battle of the first Punic War (264-241 B.C.) — suggestive neolithic and paleolithic vestiges are still visible: the grottoes of Favignana, the carvings and murals of Levanzo.

Splendid beaches are to be found at San Vito Lo Capo, Scopello, and Cornino, and a wild and rocky coast around Monte Cofano: all at less than one hour's drive from Erice.

**More information about the «Ettore Majorana» Foundation and Centre  
for Scientific Culture can be found on the WWW at the following address:  
<http://www.ccsem.infn.it>**

**More information about the Course and the Registration Form  
can be found on the WWW at the following address:  
<http://www.cern.ch/radschool>**