

WORKSHOP ON METHODS AND MATHEMATICAL MODELS FOR ESTIMATING ENVIRONMENTAL DAMAGE FROM ELECTRICITY GENERATION

18 - 22 April 2005
(Miramare - Trieste, Italy)

Co-organized by the I.A.E.A., Vienna, Austria

The Abdus Salam International Centre for Theoretical Physics (ICTP, Trieste, Italy), in cooperation with the International Atomic Energy Agency (IAEA, Vienna, Austria), is organizing a Workshop on Methods and Mathematical Models for Estimating Environmental Damage from Electricity Generation, to be held at the ICTP, from 18 to 22 April 2005. The Workshop will be directed by **Prof. Ahmed. I. Jalal** (Planning & Economic Studies Section, Nuclear Energy Dept., I.A.E.A., Vienna). The Local Organizer will be Dr. **Brian STEWART** (ICTP).

Various methods and models have been developed for quantifying environmental damage from different electricity generation technologies, among them is the IAEA's SIMPACTS model whose approach differs from the traditional environmental impact analysis in that the methodology is simple to implement and requires relatively few user input data, without compromising the reliability of the final results. SIMPACTS employs impacts-pathways approach, first estimating the pollution dispersion and deposition and then through the use of exposure-response functions calculating the impacts of pollution in a variety of sectors, thus ultimately permitting a calculation and comparison of the external costs of different electricity generating alternatives. Another application of this model is to form the basis for informed assessment, for example, of the impact of different environmental standards, or different technology choices in terms of issues relevant to environmental protection and energy system planning strategies.

The purpose of this workshop is (i) to discuss mathematical modelling approaches for estimating environmental impacts on public health, agriculture, buildings, etc., as a basis for deriving associated damage costs from various electricity generation options, and (ii) to provide training on the use of the IAEA's model SIMPACTS for estimating these impacts and costs.

Topics to be covered during the Workshop include the following:

- Detailed discussion of the SIMPACTS approach and methodology, together with illustrative examples
- Discussion of valuation techniques and approaches
- How environmental studies can be applied in decision- and policy-making.

All the participants will be expected to develop case studies during the Workshop and present their results at the end of the activity. The development of these case studies will provide the focus for learning in the Workshop.

Scientists and students from all countries that are members of the UN, UNESCO or IAEA can attend the activity. Although the main purpose of the Centre is to help researchers from developing countries through a programme of training activities within the framework of international cooperation, a limited number of students, post-doctoral scientists and researchers from developed countries are also welcome to attend. Applicants to this Workshop should be familiar with modelling techniques relating to the energy and environmental impacts. Participants will conduct a case study during the Workshop and should bring the data relevant to the chosen study that will be required for the use of the model. The basic information needed for SIMPACTS application include data on plant parameters (location, fuel used, stack height, pollutant emissions, etc.), regional population and meteorological wind data. Bringing additional data will permit a more detailed analysis.

As the Workshop will be conducted in English, participants must have an adequate working knowledge of that language. For logistic reasons, **the total number of participants is limited.**

As a rule, travel and subsistence expenses of the participants are borne by their home institutions. Every effort should be made by candidates to secure support for their fare (or at least half-fare). However, limited funds are available for some participants who are nationals of, and working in, a developing country, and who are not more than 45 years old. Such support is available only to those attending the entire Workshop. There is no registration fee to attend this activity.

The closing date for the receipt of requests for participation is 14 January 2005.

The **Application Form** is obtainable from the ICTP WWW server: <http://agenda.ictp.trieste.it/agenda/current/fullAgenda.php?ida=a04366> (which will be constantly up-dated) or from the activity Secretariat (smr1706@ictp.trieste.it). It should be completed, signed and returned before **14 January 2005 to:**

the Abdus Salam International Centre for Theoretical Physics
Workshop on Methods and Mathematical Models (smr.1706)
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DEADLINE:

14 January 2005