The Abdus Salam
International Centre for Theoretical Physics

United Nations Educational, Scientific and Cultural Organization

IAEA International Atomic Energy Agency

International Summer School on Hydrological Drought & Global Change

WATCH Water and Global Change

22 - 27 June 2008

Sponsored by
the CEC project "WATer and global CHange" and the ICTP

The Abdus Salam International Centre for Theoretical Physics (ICTP), in collaboration with partners of, and with funding provided through, the CEC project "WATCH", are organizing the **International Summer School on Hydrological Drought & Global Change,** to be held from **22 to 27 June 2008 in Trieste, Italy**.

Introduction
Drought can be defined as a sustained and extensive occurrence of below average natural water availability. It affects precipitation, soil water, groundwater and stream-flow and other variables of the hydrological system. Drought is a recurring and worldwide phenomenon, with spatial and temporal characteristics that vary significantly from one region to another.
Drought has major impacts on society. These impacts affect the environment and economy and can lead to loss of life and, especially in developing countries, aggravation of poverty and mass migration. Impacts are likely to increase with time as societies' demands for water and environmental services increase. Prolonged dry and hot weather, stressing local water resources, has always been a challenging European issue, not only within southern Europe, but also in the wetter and colder Northern and Central Europe as society and nature have adapted to the greater water availability.
No relief is expected in the future with the predicted impacts of climate change suggesting a dryer and warmer Mediterranean region and a northward shift of European climatic regimes. As a result there will be a considerable enhancement of inter-annual variability in the summer climate, associated with higher risks of heat waves and droughts as experienced in recent years (2003, 2005 and 2006). A prerequisite for an adequate assessment and management of drought related impacts is the study of the genesis and space-time development of drought.
This Summer School provides you with a unique opportunity to advance your knowledge on hydrological drought and to learn both basic and advanced techniques to detect and analyze drought, including its response to global change (i.e. climate change and anthropogenic impacts). The course will be taught by recognized experts in the field.

Summer School description
This intensive five-day school will cover an introduction to drought (incl. terminology and its impacts) and hydroclimatology (incl. climate change), the significance of hydrological processes leading to drought, data needed, drought characterization, frequency analysis, regionalization (incl. prediction at the ungauged sites), human influences (incl. climate change) and operational applications. The textbook on Hydrological Drought - Processes and Estimation Methods for Streamflow and Groundwater, Developments in Water Sciences 48 (Elsevier, 2004) will be used as course material.

The first two days of the course will mainly consist of lectures combined with some time for hands-on training using self-guided tours. A mid-week field trip is planned. On the last two days participants will work in two parallel sessions. In the first session the participants get hands-on training on drought frequency analysis and in the second session the focus is on the assessment of the impact of climate change on drought using a physically based hydrological model. The course is concluded by a plenary presentation and discussion of the outcome of the sessions by the participants.

Participants will be asked to give a short presentation on drought, possibly linked with global change, to share knowledge. Participants are expected to study part of the course material prior to the course. Participants receive a certificate (3 ECTS) after completing the Summer School provided they have actively taken part in the course.

Who should attend?
The course is suitable for master and PhD students as well as junior scientists, primarily studying or conducting research within a WATCH partner organization, who are engaged in drought analysis and who are interested to increase their knowledge and learn more about recent tools to analyze hydrological drought. A restricted number of places are reserved for researchers from non-WATCH partner organizations within Europe. The activity will be conducted in English. Some funds are available for participants (under 45 years of age), however every effort should be made by candidates to securesupport for their travel expenses especially. There is no registration fee and no cost for course material.

The **Application Form** is available at: **http://agenda.ictp.it/smr.php?1949**
Applications should be sent via e-mail, no later than **21 January 2008**, to **smr1949@ictp.it.**

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DEADLINE

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