Second Announcement of
The First International Workshop on

Climate Variability over Africa

For

2005 ICTP external activity

To be host in ALEXANDRIA, Egypt

March 6 to March 17, 2005

Purpose of the Workshop

Changes in climate could exacerbate periodic and chronic shortfalls of water, particularly in arid and semi-arid areas of the world. Developing countries are highly vulnerable to climate change because many are located in arid and semi-arid regions, and most derive their water resources from single-point systems such as bore holes or isolated reservoirs. These systems, by their nature, are vulnerable because there is no redundancy in the system to provide resources, should the primary supply fail. Also, given the limited technical, financial and management resources possessed by developing countries, adjusting to shortages and/or implementing adaptation measures will impose a heavy burden on their national economies. There is evidence that flooding is likely to become a larger problem in many temperate and humid regions, requiring adaptations not only to droughts and chronic water shortages but also to floods and associated damages, raising concerns about dam and levee failures.

The workshop is intended to review recent progress in understanding climate variability and trends (of both natural and anthropogenic origin) over Africa. The first week will be devoted to a general presentation of the main regional processes influencing the climate of the African continent, and to the modeling issues associated with the representation of such processes in regional climate models. During the second week we will focus on global processes of relevance for the African continent, with special attention to climate variability on interannual and interdecadal time-scales and ocean-atmosphere interactions.

This workshop will include tutorial lectures on the use of a Regional Climate Model (RegCM3) and Regional Spectral Model (RSM) during the first week, and a global atmospheric circulation model (SPEEDY) during the second week. Different aspects of active research, such as the approach to numerical model design and parameterization of aerosols and simple chemistry module, surface fluxes, and convection processes will be emphasized. Laboratory sessions, in which students will be taught how to use RegCM3 and Speedy models, will complete the workshop. Students will also be encouraged to complete small projects.

Organizers/Directors:

Prof. M. Abdel-Wahab (Univ. of Cairo, Egypt),

Dr. A. S. Zakey (Egyptian Meteorological Authority EMA, Egypt),

Dr. F. Molteni (The Abdus Salam ICTP, Italy),

Dr. A. Bracco (The Abdus Salam ICTP, Italy),

Dr. N. Elguindi (The Abdus Salam ICTP, Italy).

Speakers will include

M. Abdel-Wahab (Univ. of Cairo); A. Bracco (ICTP); N. Elguindi (ICTP); R. Fouli (EMA); F. Giorgi (ICTP); F. Kucharski (ICTP); L. Mearns (NCAR), F. Molteni (ICTP); M. Nour El-Dien (Water Resource, Cairo); J. Pal (ICTP); A. Provenzale (ISAC-CNR); F. Solmon (ICTP); G. Philander (Princeton Un.); . A. Yousef (EMA), J. Roads(ECPC, USA); M.Shokor (Environemt Canada); (D. Simpson, Norway);(A.S: Zakey, EMA,Egypt)

Topics to be covered:

First Week:

- Interannual and interdecadal variability in the African climate
- Ocean-Atmosphere interactions: the impacts of SST forcing in the Atlantic, in the Mediterranean and in the Indian Ocean over Africa
- The African monsoon
- El-Nino, the Indian monsoon and the teleconnections with the African climate

Second Week:

- The physics of the main regional forgings that drive climate in Africa
- Impacts of increased greenhouse gas concentration on African climate
- Climate change and air quality control
- Impacts of urbanization, desertification, deforestation and biomass burning: Aerosols and dust, their origin and climatic effects
- Land-atmosphere interactions at the regional scale: Use of climate simulations to study land-use changes and hydrological/agricultural impacts
- The hydrological cycle and water resource in Africa

Expected number of participants:

About 40 from developing countries