

**WORKSHOPS ON THE  
APPLICABILITY OF  
ENVIRONMENTAL PHYSICS AND  
METEOROLOGY IN AFRICA  
SEVENTH  
WORKSHOP ON THE APPLICABILITY  
OF ENVIRONMENTAL PHYSICS AND  
METEOROLOGY IN AFRICA**

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- The Society of African Physicists and Mathematicians (SAPAM), was inaugurated in 1984 at the International Centre for Theoretical Physics (ICTP), Italy.
- Initiated a series of workshops – the Applicability of Environmental Physics and Meteorology in Africa (APEPMA) – aimed at sensitizing African scientists, with background in the physical sciences, to the need for re-orientation towards climate-related research.

- Direct response to the drought situation in Ethiopia and other countries around the horn of Africa in the early-80s.
- This capacity-building initiative targeted young African scientists at the beginning of their careers.
- The APEMA series of workshops have since been held in Ethiopia (1987, 1989), Kenya (1991, 1993), Ghana (1995) and South Africa (2001), with considerable support from ICTP

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APPLICABILITY OF ENVIRONMENTAL  
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AFRICA**

**University of Botswana  
Gaborone, Botswana**

**Theme: PARAMETERIZATION OF  
TROPICAL MESOSCALE CONVECTIVE  
SYSTEMS IN CLIMATE MODELS**

- Mesoscale Convective Systems (MCS) are organized groups of thunderstorms that range in horizontal dimension from 5-500 km and typically possess lifetimes of 6-24 hours.
- Vertical motions within MCSs could be as significant as horizontal motions. These updraughts and downdraughts impact heavily on local rainfall, wind, lightning and other forms of severe weather.

- Their limited lateral extent and timescale do not often make them evident on synoptic charts. These also keep them at sub-grid levels in most climate models; hence, the need for parameterization.

- A better understanding of the dynamics, moisture flux, heat flux, momentum transfer etc. within these tropical storms is envisaged to improve the parameterization procedures in climate models especially as they relate to tropical Africa.

The workshop decided on the following research projects as worthy of attention by African scientists:

- River of smoke/clouds in Southern Africa (to be coordinated by Hannes Rautenbach, University of Pretoria, South Africa)
- The relationship between Atlantic hurricanes and tropical Africa mesoscale systems (to be coordinated by Akintayo Adedoyin, University of Botswana, Botswana)

Workshop participants resolved as follows:

- The APEPMA series of workshops are meeting important needs in Africa (they seem to be the only forum for exchange of ideas amongst the climate modelling community in Africa)
- For sustained capacity building, the series is recommended to be held bi-annually



- The next workshop should be a hybrid event in the form of workshop and conference on the broad theme of climate change and its multi-faceted impacts on the African continent
- The APEPMA series of workshops should have pan-African focus rather than regional outlook

- There are needs for Regional Centres, with adequate infrastructures, to serve as hubs for scientists in climate-related studies
- The African Journal of Meteorology should be considered for publication of the proceedings of the APEPMA series of workshops

- There is a need for ICTP to help draw further attention to the APEPMA series through the insertion of information about the series within the ICTP webpage
- There should be vigorous canvassing for other forms of support from other organisation in addition to the substantial support from ICTP.

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