

***IAEA/WMO Technical Meeting on  
Sources and measurements of radon and radon progeny applied to  
climate and air quality studies***

**22 – 24 June 2009**

**IAEA Headquarters, Vienna**

**Austria**

**Organized by the International Atomic Energy Agency**

**Co-sponsored by the World Meteorological Organization**

**ANNOUNCEMENT**

**BACKGROUND**

The naturally occurring radionuclide radon ( $^{222}\text{Rn}$ ), together with its radioactive progeny (in particular  $^{210}\text{Pb}$ ), have been widely used to study a variety of atmospheric processes and to test and validate comprehensive global chemical transport models. Being a noble gas, radon is not removed from the atmosphere by dry or wet deposition processes, nor does it become attached to aerosols, and so it is a good tracer for air mass movements. As it is emitted primarily from land surfaces, radon is especially useful for studying vertical dispersion in the atmosphere, and for distinguishing between continental and maritime air masses. A particularly important application in recent years has been its use in estimating regional scale greenhouse gas emissions.

On their formation in the atmosphere, the radioactive progeny of radon quickly become attached to aerosols, and so they are commonly used for study of wet and dry deposition processes, and vertical and horizontal dispersion of aerosols.

Several time series datasets exist of  $^{222}\text{Rn}$  and  $^{210}\text{Pb}$  concentrations in the planetary boundary layer (PBL), although observations of their vertical profiles are sparse. In recent years the increased availability of relatively low cost high-precision detectors have made gathering of radon datasets more affordable. An example of such a data collection is the use of radon monitors as a part of the World Meteorological Organization's Global Atmosphere Watch (GAW) network.

In June 2003 an international expert meeting was held in Gif sur Yvette, France on sources and measurements of natural radionuclides applied to climate and air quality studies, co-sponsored by the World Meteorological Organization (WMO), International Atomic Energy Agency (IAEA) and Centre National de la Recherche Scientifique (CNRS). The WMO/GAW report of that meeting is available from <http://www.wmo.ch/pages/prog/arep/gaw/documents/gaw155.pdf>. The meeting participants identified that the effective use of radionuclide observations is limited by the accuracy of source functions used by models and by a globally uncoordinated approach to measurements, data archiving and data quality assurance.

This Technical Meeting is a follow-up to the 2003 meeting, with a specific focus on radon and its progeny. The Technical Meeting should bring together scientists and engineers who are involved in one or more of the following:

- Measurement of radon exhalation flux densities from Earth's surface.
- Creation and use of models of radon exhalation from the soil as a function of soil properties, or use of empirical relationships to estimate radon exhalation.
- Measurement of atmospheric radon and radon progeny concentrations, whether of continuous PBL concentrations or of vertical gradients.
- Development and/or use of high-resolution atmospheric transport models.

A major focus of the meeting will be on moving towards agreed approaches to estimating radon exhalation flux densities, and to improving quality assurance of measurements both of radon exhalation flux densities and of concentrations of radon and radon progeny in the atmosphere. Improvements in these areas should be made with the aim of improving the usefulness and reliability of input data needed by those developing and using atmospheric transport models.

## **OBJECTIVES**

- 1) To discuss and review the needs of the atmospheric modelling community in relation to the radon exhalation source term, including required spatial extent, spatial density and accuracy of radon exhalation estimates.
- 2) To discuss and review the various approaches to estimating radon exhalation fluxes from Earth's surface, based on both measurement and modelling techniques.
- 3) To discuss and review the existing exhalation and air concentration datasets, and various approaches to improving quality assurance and comparability of future measurements by different research and monitoring groups.

## **PARTICIPATION**

A person will be eligible to participate only if nominated by the Government of an IAEA Member State (Ministry of Foreign Affairs or National Atomic Energy Authority) or by an Organisation invited to participate. Nomination for participation (Form A) should be received by the IAEA not later than **31 March 2009**. The participants should be scientists or engineers dealing with radon exhalation flux estimates, radon and/or radon progeny concentrations in the free atmosphere, or with atmospheric modelling development and application. *A contribution from the participant in the form of a short abstract covering his/her work relevant to the objectives of the meeting will be necessary for consideration for participation.*

## **FINANCIAL SUPPORT**

As a general rule, the IAEA does not pay the costs for attendance to the meeting. However, limited funds may be made available to assist the attendance of selected participants and approved in accordance with the current Agency rules and regulations. Generally, not more than one financial grant will be awarded to a Member State. If Governments wish to apply for financial support on behalf of their nominees, they should address specific requests to the IAEA Scientific Secretary.

## MEETING FORMAT

To facilitate proceedings, participants are invited to contribute an oral presentation on a subject relevant to the scope and objectives of this meeting. Participants should submit an abstract of their proposed presentation along with their nomination. The official language of the meeting is English. No interpretation will be provided. It is expected that the meeting will start at 09:00 on Monday, 22nd June 2009 and conclude by 16:00 on Wednesday 24th June 2009.

The outputs of discussions will be recorded for possible dissemination to Member States as a joint IAEA/WMO technical publication. Contributors of material to be included in the Agency proceedings are required to assign all copyrights or rights to publish to the Agency. Please complete and sign the Form B and send it to the IAEA Scientific Secretary by post or email. The authors should ensure that material they make available for possible publication by the IAEA does not include copyrighted material or other impediments for reproduction.

## LOCAL ARRANGEMENTS

It is the responsibility of all participants to make their own travel arrangements to/from Austria. Detailed information on accommodation, local transport to/from the meeting venue, and other organisational details, will be sent to all designated participants well in advance of the meeting.

## VISA

Designated participants who require a visa to enter Austria should submit the necessary application to the nearest diplomatic or consular representative of Austria well in advance of entry. An official letter of invitation will be issued to all designated participants by the IAEA Scientific Secretary.

## DEADLINES

- **20 March 2009:** Submittal of requests to the IAEA for participation and financial support close
- **31 March 2009:** Participants informed of their acceptance of participation, and decision on request for financial support.

## IAEA SCIENTIFIC SECRETARIES

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