MERCOLEDI' 24 FEBBRAIO 2016 - ORE 11
AREA DELLA RICERCA CNR-INAF
SALA 216 - VIA GOBETTI 101 (CAPOLINEA BUS 87) BOLOGNA

Science and Peace: Monitoring Worldwide Environmental Radioactivity

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The Comprehensive Nuclear-Test-Ban Treaty Organization was established in 1996 to build up the verification regime, and to ensure its completion by the time the Treaty enters into force and to promote the Treaty's universality. The verification regime is based on the three mutually-reinforcing pillars – the International Monitoring System, the International Data Centre and provisions for On-Site Inspections – and is designed to detect any nuclear explosion conducted on Earth – underground, underwater or in the atmosphere. Particularly, the International Monitoring System consists of 321 monitoring stations and 16 laboratories built world wide. These 337 facilities monitor the planet for any sign of a nuclear explosion using four complementary verification methods: seismic, hydroacoustic and infrasound stations monitor the underground, the large oceans and the atmosphere respectively; radionuclide stations detect radioactive debris from atmospheric explosions or vented by underground or underwater nuclear explosions.

Then the International Monitoring System continuously takes environmental measurements including atmospheric concentrations of several radionuclides. The characterization of the existing and legitimate background, which is produced mainly by Nuclear Power Plants and Isotope Production Facilities, is of high interest to improve the capabilities of the monitoring network. Over 400 reactors at Nuclear Power Plants are currently in operation worldwide, while only five Isotope Production Facilities are considered to be continuously emitting relevant activity levels. Nevertheless, the emission strengths of typical nuclear power reactors are below the emission strengths of these Isotope Production Facilities.

Finally, the Comprehensive Nuclear-Test-Ban Treaty Organization has emphasized how monitoring data can support disaster mitigation efforts, for example by helping tsunami warning centres to issue more timely warnings or by monitoring airborne radioactivity after nuclear accidents. This was well recognized by the United Nations General-Secretary, Mr. Ban Ki-moon, who stated in his video address to participants attending the Comprehensive Nuclear-Test-Ban Treaty Organization Science and Technology Conference in June 2011 "Even before entering into force, the CTBT is saving lives".

L'evento è organizzato in collaborazione con l'Ordine interprovinciale dei Chimici dell'Emilia-Romagna.
La partecipazione al seminario dà diritto a n° 2 CFP per Chimici

ORDINE INTERPROVINCIALE DEI CHIMICI DELL'EMILIA ROMAGNA

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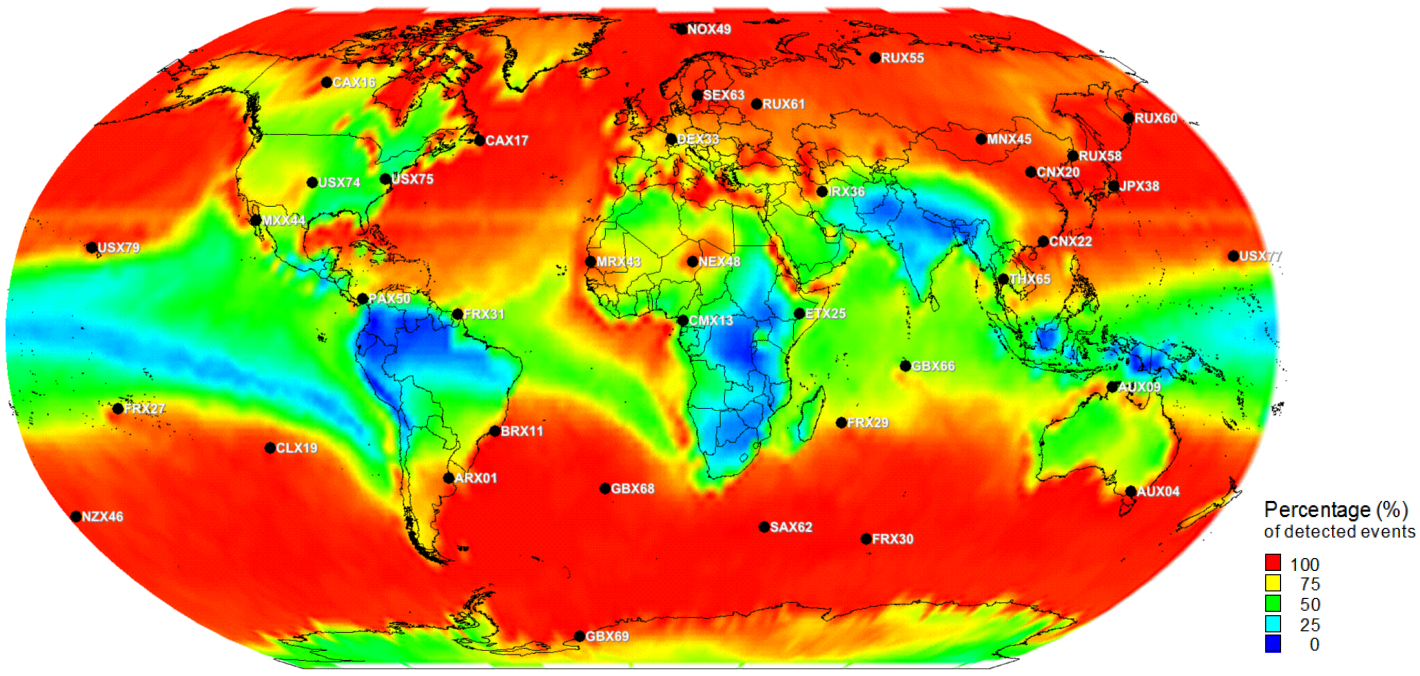
Wolfango Plastino's short biography

1996-present Research Scientist and then Associate Professor at the Dept. of Mathematics and Physics - Roma Tre University.
1996-present Scientific Coordinator for Environmental Radioactivity and Radiodating at Gran Sasso National Laboratory - National Institute of Nuclear Physics (INFN) and then Scientific Coordinator of INFN Research Project ERMES (Environmental Radioactivity Monitoring for Earth Sciences).
2002-2008 Italian scientific Delegate at the Preparatory Commission of the Comprehensive Nuclear Test Ban Treaty Organization (CTBTO) - United Nations Vienna as expert of radiometric surveys and environmental sampling for On-Site Inspection (OSI).
2012-present Member of the European Academy of Sciences and Arts, Salzburg, Austria.
2015-present Scientific Secretary of the Amaldi Conferences, Accademia Nazionale dei Lincei.



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