

INVITED TALK: The potential detection of low level aerosol isotopes from new civilian nuclear processes

Thursday, 29 September 2016 13:40 (0:20)

Content

As the world faces a challenging future in maintaining the commercial availability of radioactive isotopes for medical use, new methods of medical isotope production are being pursued. Many of these are small in size and could effectively operate continuously. With the potential for much shorter retention times, a new suite of isotopes may soon be found in the environment. The authors estimate that low-level isotopes of gas/volatile origin could be detectable as compared to those released in nuclear reactor operations.

About the Presenter

Harry Miley is the chief scientist of PNNL's Nuclear Explosion Monitoring Program, which for over twenty years has been focused on monitoring Earth's environment for radionuclide debris of nuclear weapons indicating a violation of a treaty or agreement. The NEMP program serves the National Nuclear Security Administration, the Department of Defense, and the US State Department with technology developments, scientific analysis of monitoring network data, and technical advice related to the negotiation of the Comprehensive Nuclear Test Ban Treaty, or CTBT. Recently, Dr. Miley has helped to form the corps of on-site inspectors for the CTBT through training of new inspectors and by leading the radionuclide component of the inspection team in field training exercises. Dr. Miley has also been a lifelong contributor to neutrino and dark matter research. He helped found and organize the Majorana collaboration, a multi-institution experiment to measure the mass of the neutrino through ^{76}Ge double-beta decay. Dr. Miley received his B.S. in Physics from South Carolina College, the honors college of the University of South Carolina, in 1982; and his Ph.D. in Physics from the University of South Carolina in 1987.

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Session Classification : Special Session: Monitoring Networks

Track Classification : Special Topic: Monitoring Networks