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## ORAL PRESENTATION - Fukushima fallout at Thessaloniki, Greece (40°N) and Milano, Italy (45°N)

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An earthquake of magnitude 9.0 occurred on March 11, 2011 on the Pacific Ocean side of northern Honshu, Japan, followed by a tsunami that struck the east coast of the Tohoku region and caused a serious nuclear accident at the Fukushima Daiichi Nuclear Power Plant. The contaminated air masses were transported across the Pacific towards the North American continent, Europe and Central Asia despite dispersion and washout along the trip. Radionuclides such as  $^{131}\text{I}$ ,  $^{134}\text{Cs}$ , and  $^{137}\text{Cs}$  were detected in different locations throughout Europe.

Right after the Fukushima reactor accident, systematic analysis of environmental samples was undertaken in order to detect and quantitatively determine the radionuclides due to the Fukushima fallout in Milano and Northern regions, Italy, by LASA Laboratory of the INFN (Istituto Nazionale di Fisica Nucleare) Sez. of Milano and in Thessaloniki, Greece by the Laboratory of Radiation Physics. The concentrations of  $^{131}\text{I}$ ,  $^{134}\text{Cs}$ , and  $^{137}\text{Cs}$  mainly in air and water, which control the main way of deposition of the radionuclides in the soil surfaces, vegetables and food chain, were determined. Furthermore analysis of soil, grass and milk samples in both sites of investigation were taken place. The estimated effective doses for population related to the contributions of Fukushima fallout due to different pathways were very far below levels of concern.

This work gives the extent of contamination in Northern Greece and in Northern Italy due to Fukushima fallout and interprets the measured activities at the site of investigation as these resulted from a complicated air mass transport. For the interpretation of activity variations of measured radionuclides, the NOAA HYSPLIT backward trajectories model has been used to assess the transport pattern.

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