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Introduction: geoscientific knowledgebase of Chernobyl and Fukushima

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Radioactive contamination after the Chernobyl (1986) and Fukushima (2011) accidents is a multi-disciplinary geoscience problem. Just this session (GI1.4) contains presentations of
(i) atmospheric transport for both short and long distances,
(ii) aerosol physics and chemistry,
(ii) geophysical measurement method and logistics,
(iv) inversion method to estimate the geophysical source term and decay,
(v) transport, migration, and sedimentation in the surface water system,
(vi) transport and sedimentation in the ocean,
(vii) soil chemistry and physics,
(viii) forest ecosystem,
(ix) risk assessments,
which are inter-related to each other.

Because of rareness of a severe accident like Chernobyl and Fukushima, the Chernobyl's 27 years experience is the only knowledgebase that provides a good guidance for the Fukushima case in understanding the physical/chemical processes related to the environmental radioactive contamination and in providing future prospectives, e.g., what we should do next for the observation/remediation.

Unfortunately, the multi-disciplinary nature of the radioactive contamination problem makes it very difficult for a single scientist to obtain the overview of all geoscientific aspects of the Chernobyl experience. The aim of this introductory talk is to give a comprehensive knowledge of the wide geoscientific aspects of the Chernobyl contamination to Fukushima-related geoscience community.