Contribution ID: **922**   Type: **Verbal**

CONTRIBUTION OF MASS SPECTROMETRY TO THE ENHANCEMENT OF OBJECTIVES OF RADIOLOGICAL CHARACTERIZATION IN ENVIRONMENTAL SAMPLES

Tuesday, 17 May 2022 09:20 (20 minutes)

Turnaround time and performances of standard analytical protocols may not be compatible with the objectives (contributing to knowledge of the radiological state, detecting an abnormal rise in radioactivity as early as possible…) and the levels of radioactivity present in the environment. Research and expertise programs, implemented to explain or predict radioactivity transfers between the different compartments of the environment, require a rapid and consistent identification of isotopes (U, Pu, Th) in order to allow experts to determine the origin of radionuclides.

Developments engaged by IRSN in order to meet these requirements have made possible to develop reliable methods for the rapid processing and analysis of solid matrices, including chemical treatment - separation and measurement by mass spectrometry. Some of these techniques have been automated and can be used for emergency response. Others have been deployed as part of regular monitoring metrology, where they help to increase productivity and sensitivity.

This communication will be focused on various examples to compare the performances of standard methods with those of the new techniques of preparation and analysis by ICP-MS. This overview of new methods will explain how IRSN's needs are met through faster, more precise and more exhaustive characterizations of environmental samples, both routinely and during radiological emergencies.

Primary authors: Ms MAGRE, Anaëlle (Institut de Radioprotection et de Sûreté Nucléaire (IRSN)); Dr HABIBI, Azza (Institut de Radioprotection et de Sûreté Nucléaire (IRSN),); Mrs AUGERAY, Céline (Institut de Radioprotection et de Sûreté Nucléaire (IRSN)); Dr BOULET, Béatrice (Institut de Radioprotection et de Sûreté Nucléaire (IRSN)); Ms CARRIER, Coralie (Institut de Radioprotection et de Sûreté Nucléaire (IRSN)); Dr JEAGLER, Hugo (Institut de Radioprotection et de Sûreté Nucléaire (IRSN), PSE-ENV/SAME/LERCA)

Presenter: Mrs AUGERAY, Céline (Institut de Radioprotection et de Sûreté Nucléaire (IRSN))

Session Classification: Nuclear Analytical Methods

Track Classification: Nuclear Analytical Methods