**Status of low-energy AMS detection of Iodine-129 at CNA: performance and background correction**

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129I (T1/2 = 15.7 My) is present in all environmental compartments and has a very conservative behaviour in water. Its presence in the environment is mainly due to the nuclear fuel reprocessing plant discharges, whose history is relatively well-known. These characteristics make of it an excellent hydrological tracer. For this and other applications, 129I is one of the radionuclides most frequently measured by Accelerator Mass Spectrometry.

129I measurements are routinely performed at CNA (Sevilla, Spain) by a 1MV AMS system manufactured by High Voltage Engineering Europe (HVEE, The Netherlands) in 2005. Charge state selection after acceleration has evolved from 4+ to 3+ and now to 2+, especially after the stripping gas change from Ar to He, which has provided a strong increase in the accelerator transmission up to more than 40% in this last charge state.

The instrumental background level has not changed sensitively after the last stripper gas and charge state selections, showing typical isotopic ratios of 129I/127I =2-3 x 10-13. This background is caused by different effects, including contamination and interference from neighbouring isotopes as 127I. The influence is especially relevant when measuring samples with low 127I2- currents, as the contamination makes the isotopic ratios increase. In order to carry out a complete subtraction of the background, a double correction is carried out at CNA, based on the continuous analysis of instrumental blanks with different AgI/Nb proportions, which present a range of I- currents and isotopic ratios. In this presentation, the different experiments performed for the measurement optimisation as well as the background subtraction procedure will be presented.