

Measurements of surface radioactivity by Alpha/Beta detection

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Surface contamination is an important background in many $2\beta0\nu$ or dark matter searches. For example, gammas or betas can leak in the neutron recoil band if they sit on the surface of the bolometers like in Edelweiss or CDMS experiments. For $2\beta0\nu$ experiments like CUORE, degraded surface alphas can get into the $2\beta0\nu$ region and can not be distinguished from a $2\beta0\nu$ event. In experiments like SuperNemo the ^{208}Tl and ^{214}Bi contamination in the thin $2\beta0\nu$ sources, which may produce two electrons, is one of the most critical source of background.

In this talk I will describe and present the performances of some large area detectors used nowadays in the low-background community to assay surface contaminations by alpha/beta detection. This review includes the XIA low-background alpha spectrometer, the BiPo-3 detector and the BetaCage.

Primary author: Dr LOAIZA, Pia (LAL)

Presenter: Dr LOAIZA, Pia (LAL)

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