



## Poster session 4 – Friday 8 July

### P4.071 Gamma-tracking and sensitivity to gamma-emitting backgrounds in SuperNEMO

S Calvez

Université Paris-Saclay, LAL, France

*on behalf of SuperNEMO collaboration*

The SuperNEMO demonstrator's unique design, combining both tracking and calorimetry techniques, provides essential topological informations. Indeed, fully reconstructing the event kinematics not only allows a powerful background discrimination but also gives access to a variety of event topologies which can be used to measure the different background contributions.

The SuperNEMO software relies on a range of algorithms to ensure a faithful event reconstruction. The improved detector performance for  $\gamma$  detection coupled to new  $\gamma$ -reconstruction algorithms, based on geometrical and Time-of-Flight criteria, will not only improve the measurements of the  $\gamma$ -emitter backgrounds ( $^{208}\text{Tl}$ ,  $^{214}\text{Bi}$ ...) but also increase the sensitivity for the search of  $\beta\beta$ -decays to the excited states. The poster will also present how the use of topological informations in multivariate analysis could improve the SuperNEMO demonstrator sensitivity, both for the search of the neutrinoless double beta decay and for the background control.