

THE PHYSICS COLLOQUIUM

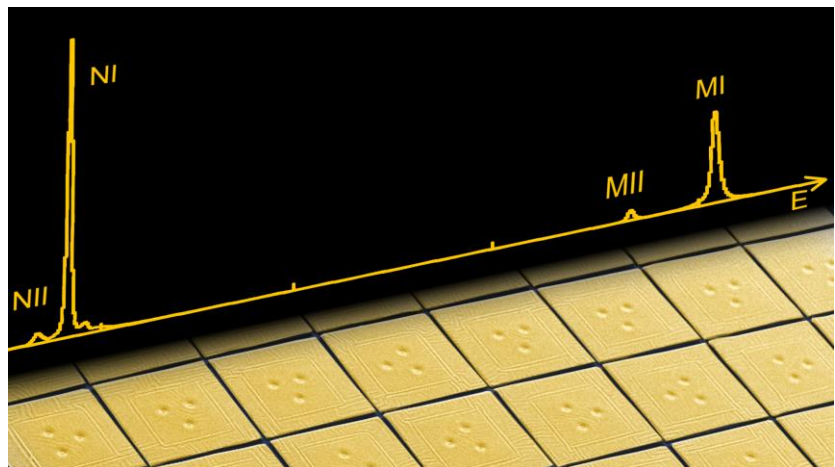
Thursday 26 September 2024, 4:00 p.m.
Nijenborgh 4, Lecture Hall 5111.0022

ECHo: a "cool" neutrino mass experiment

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The Electron Capture in Ho-163 experiment, ECHo, is a running experiment for the determination of the neutrino mass scale via the analysis of the end point region of the Ho-163 electron capture spectrum. In the first phase, ECHo-1k, about 60 metallic magnetic calorimeter pixels enclosing Ho-163 ions for an activity of about 1Bq per pixel have been operated for several months. The goal of this first phase is to reach a sensitivity on the effective electron neutrino mass below 20 eV/c^2 by the analysis of a Ho-163 spectrum with more than 10^8 events. Results from the analysis of the acquired data will be presented with a preliminary description of the endpoint region.



With ECHo-1k the feasibility of a larger experiment for the determination of the neutrino mass scale based on Ho-163 has been demonstrated. A second phase experiment to reach 1 eV/c^2 sensitivity is already under construction: ECHo-100k. In ECHo-100k about 12000 MMC pixels each hosting Ho-163 for an activity of 10 Bq will be simultaneously operated. The necessary upgrade of the technologies used in ECHo-1k will be discussed along with the program to overcome the challenges both for hardware and analysis..

Join us for coffee starting 3:30 p.m. Refreshments will be served after the lecture.

For more information contact the host: Ann-Kathrin Perrevoort (a.perrevoort@rug.nl)
Website: <http://www.rug.nl/research/vsi/colloquia/>