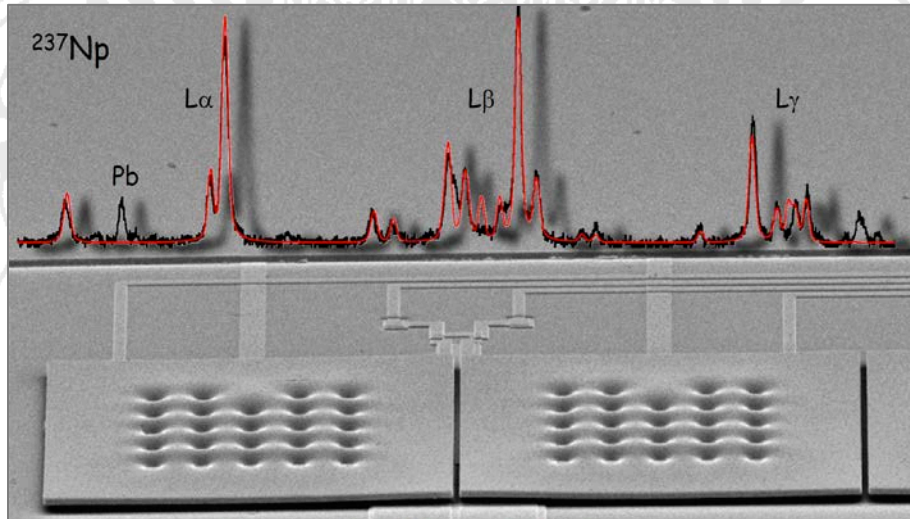




# SONDERKOLLOQUIUM

AM 4. NOVEMBER 2014 UM 9 UHR S.T.

IM SEMINARRAUM DES GUSTAV-MIE-HAUSES



## Magnetic Micro-Calorimeters for Astroparticle Physics

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Metallic magnetic micro-calorimeters are energy dispersive detectors operated at temperatures below 0.1 Kelvin. Their resolving power  $E/\Delta E$  approaching 5000, the intrinsic response time well below 1  $\mu$ s and the excellent linearity make magnetic micro-calorimeters very attractive for numerous experiments.

With these detectors we have performed the first high resolution calorimetric measurements of the Ho-163 electron capture spectrum. The achieved performance motivated the formation of the international collaboration ECHo (Electron Capture Ho-163) to investigate the electron neutrino mass in the sub-eV range using the Ho-163.

For the search of neutrinoless double beta decay in Mo-100 with scintillating crystals, we have developed photon and phonon detectors based on magnetic micro-calorimeters to be used in the experiments AMoRE and LUMINEU.

In this talk, the ECHo experiment as well as the other applications of magnetic micro-calorimeters for astroparticle physics will be discussed.