Contribution ID: **78** Type: **Oral**

Metallic Magnetic Calorimeters for Dark Matter searches

Thursday 6 June 2019 14:50 (20 minutes)

In the last decade low temperature metallic magnetic calorimeters have shown to be suitable for a large number of applications thanks to their excellent energy resolution, reliable energy calibration and extremely low intrinsic background. Recently the interest to use these detectors in experiments designed for understanding the nature of Dark Matter have led to the development of new detector systems.
We discuss the use of metallic magnetic calorimeters at the IAXO helioscope. The expected energy resolution below 10 eV FWHM will open the possibility for investigating a possible contribution of axion-electron coupling to the solar axion spectrum.
Metallic magnetic calorimeter can also be used for the readout of large crystals for the search of light mass WIMPs interaction. We present two different detector systems: one for the detection of light and heat generated in scintillating crystals following particle interaction and a second one for the detection of very small energy releases in semiconductor thanks to the Neganov-Trofimov-Luke amplification.

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Session Classification: Afternoon 41