



## Metallic Magnetic Calorimeters

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Metallic magnetic calorimeters (MMC) are calorimetric particle detectors, operated at temperatures below 50mK, that make use of a paramagnetic temperature sensor to transform the temperature rise upon the absorption of a particle in the detector into a magnetic flux change in a SQUID. During the last years a growing number of groups started to develop MMC for a wide variety of applications, ranging from alpha-, beta- and gamma-spectrometry over a kilo-pixel molecule camera and arrays of high resolution x-ray detectors to detectors for neutrino physics. For soft x-rays an energy resolution of 1.6 eV (FWHM) has been demonstrated and we expect that the resolving powers  $E/dE_{FWHM}$  in some of the applications will reach values beyond 10000 in the next generation of devices.

We give an introduction to the physics of MMCs and summarize the presently used read-out schemes for single channel read-out and multiplexing. We discuss design considerations, the micro-fabrication of MMCs and the performance of micro-fabricated devices in the fields of atomic, molecular and particle physics.