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Development of superconducting absorbers for CRESST light detectors

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An important aspect of Dark Matter search experiments is the active background reduction by identification of the type particle interacting in the detector. In CRESST this is achieved by a simultaneous detection of heat and light produced by an interaction in a scintillating absorber. The overall light collection efficiency is a crucial parameter in order to achieve enough sensitivity to measure the small fraction of the deposited energy that is emitted as scintillation light.
With this purpose a thin superconducting lead film deposited on sapphire substrates has been tested as an alternative light absorber to a standard silicon absorber.
The first results already show a better light absorption of the lead film. Other superconducting films are also being analyzed.

Author: Dr BENTO, Antonio (Max-Planck-Institut Fuer Physik Muenchen)

Orateur: Dr BENTO, Antonio (Max-Planck-Institut Fuer Physik Muenchen)