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### PTOLEMY

## A Method for Thermal Relic Detection for MeV Dark Matter and Massive Neutrinos

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*Abstract*

The current Universe is filled with thermal relics produced during a structureless, rapidly expanding period of the early Universe.

These relics have cooled under the expansion of the Universe and are sensed through the action of their mass and peculiar motion within large-scale gravitating structures. The true nature of these relics is still a matter of prediction constrained by model assumptions.

PTOLEMY is a novel method of 2D target surfaces, fabricated from Graphene, that has unique directional detection capabilities for MeV dark matter and forms a basis for a future large-scale relic neutrino detector.

The discussion of PTOLEMY focusses on experimental challenges, recent developments and the path forward to discovery sensitivity.

June 22, 2017 - 2:30 pm  
LNGS - "B. Pontecorvo" room