Contribution ID: **85** Type: **not specified**

The celestial dark matter calorimeter

Monday 8 May 2023 16:00 (20 minutes)

Celestial bodies are well motivated laboratories for dark matter searches. As an example, dark matter may scatter multiple times in the Earth and get trapped by the Earth's gravitational potential. These dark matter could subsequently annihilate into Standard Model particles and heat the Earth. Taking advantage of Monte-Carlo simulations with detailed analytical computations, we obtain improved bounds on dark matter for both spin-dependent and spin-independent interactions.

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Session Classification: 分会报告（理论）