

Characterization of the DIMS system based on astronomical meteor techniques for macroscopic dark matter search

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In this contribution, we give a preliminary report on the characterization of the DIMS system designed for macroscopic dark matter (*macro*) search.

We deduced the potentiality of the DIMS system for macro investigations.

We reviewed two theoretical models for the interaction of such objects in the Earth's atmosphere and generalized one of them for arbitrary speed values. We applied astronomical meteor techniques to calibrate DIMS sensor and determined the potentiality of DIMS system in macro investigations.

None of the analyzed events showed clear non-meteor origin. In the current setup, DIMS has a limiting absolute magnitude for meteors of about +6. We deduced the expected constraints from DIMS experiment for macros observation. In the 1-year projection, DIMS will be able to probe macro's masses up to $10^2 - 10^3$ g, depending on the considered model.