SMALL SCALE ANISOTROPIES OF UHECRS FROM SUPER-HEAVY HALO DARK MATTER

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Super-heavy (SH) quasi-stable particles, relics of the post inflationary era can represent all or part of the cold dark matter in the universe. At the same time their rare decays can account for the observed fluxes of ultra-high energy cosmic rays (UHECRs). We demonstrate that a realistic dark matter profile in the halo of our galaxy can explain the small scale anisotropies detected by the AGASA experiment, though being consistent with the apparent large scale isotropy. A larger statistics of events, that will be available with future detectors as Auger, EUSO/OWL will be crucial to confirm or rule out the model of super-heavy relics as sources of UHECRs.