

UPPER LIMIT ON HIGH - IONIZING PARTICLE FLUX UNDERGROUND

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An experimental search for high-ionizing particle flux at depth 850 hg/cm^2 has been performed using Baksan Underground Scintillation Telescope data. Our trigger conditions were following: only one track in the Telescope; energy deposit > 1.5 relativistic particle in each of 4 scintillator layer; < 16 hitted detectors in each layer. Thus, our experimental upper limit can be applied to at least 3 underground phenomena: a) very high energy muon flux; 2) narrow muon bundle flux; 3) any exotic high-ionizing particle flux. The upper limit for sum of all these fluxes for particle (or particles) with more than 8-fold energy losses is equal to:

$$I(> 8 r.p.) < 1.8 \times 10^{-14} \text{ cm}^{-2} \text{ s}^{-1} \text{ ster}^{-1} \quad (67\% \text{ c.l.})$$