



Dense DM clumps seeded by cosmic string loops and DM annihilation

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We develop a model of production of the very dense clumps of DM in RD epoch due to the accretion of DM on the loops of cosmic strings as the seeds. At some time the loops disappear, for example due to the gravitational radiation, and the remaining dense clumps produce the enhancement of the annihilation signal. We take into account the velocity distribution of the strings, and consider the two extreme regimes of DM annihilation: fast decay and continuous evaporation. The produced annihilation flux of gamma radiation is detectable, and for some parameters of DM particles and the strings can exceed the extragalactic flux of the gamma-radiation observed by Fermi. For the fixed parameters of DM particles (e.g. neutralino with fixed masses and cross-section of annihilation) one can obtain the limits on the basic string parameter, tension μ , which is stronger than (more general) limits obtained from WMAP observations, cosmological nucleosynthesis and gravitational lensing. In particular for the neutralino with 100 GeV mass we exclude the interval $5 \times 10^{-10} < G\{\mu\}/c^2 < 5.1 \times 10^{-9}$.

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