Seventeenth Marcel Grossmann Meeting



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Strange quark matter as dark matter

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Forty years ago, Witten suggested that dark matter could be composed of macroscopic clusters of strange quark matter. This idea was very popular for several years, but it dropped out of fashion once lattice QCD calculations indicated that the confinement/deconfinement transition, at small baryonic chemical potential, is not first order, which seemed to be a crucial requirement in order to produce large clusters of quarks. We revised both the conditions under which strangelets can be produced in the Early Universe and the many phenomenological implications of their existence. We discusses the limits on their mass distribution and a possible and simple scheme for their production alongside with the most promising techniques to detect this type of objects.

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