

New Horizons in Primordial Black Hole physics (NEHOP)



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Primordial black holes from confinement

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In this talk I will present a novel mechanism for the formation of primordial black holes. Here, heavy quarks of a confining gauge theory produced by de Sitter fluctuations are diluted by inflation and get confined after horizon re-entry. The large amount of energy stored in the color flux tubes connecting the quark pair leads to black-hole formation. After discussing the confinement dynamics, I will focus on the phenomenological features of the new mechanism and show it can account for both the entirety of dark matter and the supermassive black holes in the galactic centers. Under proper conditions, the scenario can be realized in a generic confining theory, including ordinary QCD. Moreover, highly-spinning sub-solar black holes can be easily produced.

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