Gravitational Geometry and Dynamics (GGD) Group Seminar

A model for mixed warm and hot light dark matter

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Weakly interacting massive particles (WIMPs) are by far the most extensively studied class of cold dark matter (CDM) as the correct dark matter abundance is easily reproduced with cross sections around the weak scale. They have been extensively searched for by many experiments (direct and indirect detection, and colliders) with no success. The null results reported thus far motivate us to explore alternative candidates. As CDM faces problems at small-scale astrophysical scales, mixed populations of dark matter are well motivated. Right-handed neutrinos with mass around keV scale are suitable candidates. In this talk I will present a model for mixed warm and hot light dark matter. I will show that this model features all ingredients to overcome the overproduction of keV neutrino dark matter, and explore the phenomenological implications for Big Bang Nucleosynthesis and the number of relativistic degrees of freedom.

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More information about the GGD group and seminars in gravitation.web.ua.pt

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