



PHYSICS AND ASTRONOMY SEMINAR

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“New Venues in Formation and Detection of Primordial Black Hole Dark Matter”

Abstract

“Primordial black holes (PBHs) provide an attractive non-particle dark matter (DM) candidate. I will present a novel PBH production mechanism that can appear generically in models with scalar fields and that avoids the usual issue of fine-tuning related to inflation. Recent re-evaluations of PBH constraints suggest that the open parameter space for PBHs to constitute all of dark matter is appreciably larger than previously thought. As I will show, compact stars can serve as laboratories to probe it. The variety of resulting novel astrophysical signals are of particular interest to the vibrant field of multi-messenger astronomy. More-so, PBH-star interactions suggest an elegant resolution to some of the most puzzling questions in astrophysics, such as the origin of gold and other heavy elements. I will also briefly discuss a potential new generic signal from regular neutron star mergers”.

Friday, March 29, 2019

2:00 p.m.

Hickman Building – Room 116