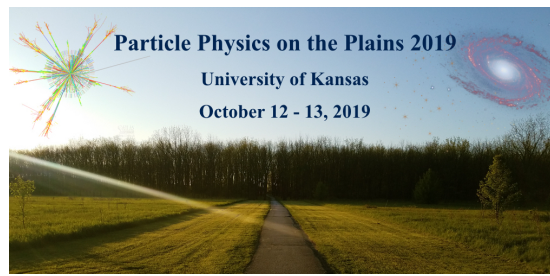


Particle Physics on the Plains 2019



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Exotic(Dark) Compact Object Searches with Extreme Mass Ratio Inspirals

Saturday 12 October 2019 14:20 (20 minutes)

Exotic compact objects such as primordial black holes, boson star, etc., are theoretically predicted to exist and can make interesting dark matter candidates, yet with no definitive observational evidence for their existence. This talk will discuss a new method of using gravitational waves from the extreme mass ratio inspiral, formed by an ECO and a supermassive black hole in the center of each galaxy as a probe of the ECOs. The corresponding gravitational waves can be detected by future space-based interferometer gravitational wave detectors and the mass of the ECO can be determined very precisely. Aside from gravitational wave signals, possible electromagnetic counterparts for some ECOs, like boson stars, will be discussed.

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