

Whispers from the Dark Universe - Particles & Fields in the Gravitational Wave Era

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WHISPERS FROM THE DARK UNIVERSE – PARTICLES & FIELDS IN THE GRAVITATIONAL WAVE ERA

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Ultra slow-roll scalars around black holes

Primordial black holes (PBHs) could have played a significant role in our cosmological history and are potential candidates for dark matter composition. Ultra slow-roll (USR) inflation has garnered significant interest (arXiv: 1707.05644, arXiv: 1811.11158) for its ability to amplify the primordial power spectrum, leading to additional PBH production. Recent studies have explored spherically symmetric black holes within inflationary contexts, as models of inhomogeneity. In this talk, I will present recent extensions of this work, focusing on the USR case. I will discuss the excitation of modes during the transition from slow-roll (SR) to USR, and how the phenomenology of this transition differs from that of pure de Sitter space.

Work in collaboration with Ruth Gregory and Sam Patrick.

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