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Primordial black holes in the axion-like curvaton model and the LIGO events

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For a realistic scenario of inflationary primordial black holes (PBHs), a highly blue-tilted power spectrum of primordial perturbations is required. In the axion-like curvaton model, which is base on the supersymmetric axion model, such a spectrum is achieved. I will show that PBHs formed in this model can explain the massive black holes implied by the LIGO gravitational wave (GW) events. Large scalar curvature perturbations induce primordial GWs via the second-order effects, and they are compared with the constraints from the pulsar timing array experiments. In calculating the secondary GWs, it is important to take into account the effect of non-Gaussianity that a fixed amount of PBHs can be produced by a smaller power spectrum.

Parallel Session

Cosmology and Gravitational Waves

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