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Phase Transitions as Cosmological Witnesses

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4 May 2020, 15:15
15m
Parallel Talk Cosmology Cosmology I
Speaker
Dan Vagie
Description

We study the gravitational wave background from a first order phase transition generated during standard and nonstandard cosmological histories. We analyze the hydrodynamic properties of the plasma to define a self-similar invariant velocity profile to be utilized in the Sound Shell Model for acoustic gravitational wave production. We show that the relevant equations in an expanding universe take on the usual Minkowski form when the quantities are appropriately scaled. This allows us to investigate the impact an Early Matter Dominated era or a period of Kination before the Standard Radiation Dominated era will have on the stochastic gravitational wave background.

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Presenter: VAGIE, Dan

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