

JOINT TUFTS/MIT COSMOLOGY SEMINAR

The new relationship between inflation and gravitational waves

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It is well known that the amplitude of the gravitational wave (GW) produced from the vacuum fluctuation during inflation is proportional to the energy scale of inflation. Thus the observation of the inflationary GW by CMB B-mode is expected to reveal the energy scale of new physics as well as pin down the inflation model. However, alternative production mechanisms of GW during inflation has been discussed recently. We consider a coupled system between an axion and SU(2) gauge fields whose energy density is subdominant. We found the GW generated by the spectator fields can be much larger than the GW from vacuum fluctuation without a fine-tuning. The produced GW is chiral, its tilt is arbitrary and the production of additional scalar perturbation is suppressed. Therefore, with our spectator fields, a low energy inflation model can produce detectable GW.

Tuesday, February 21, 2017, 2:30 pm
574 Boston Ave, Room 310
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Refreshments at 2:00 outside room 304