

JOINT TUFTS/MIT COSMOLOGY SEMINAR

Gravitational waves from a strong electroweak phase transition

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In the Standard Model, the electroweak phase transition is a crossover. In many extensions, the phase transition can be first order - even strongly so. The ensuing phase transition results in collisions of bubbles of the new Higgs phase. These collisions, and the associated interactions of sound waves in the plasma, are substantial sources of gravitational waves. For a phase transition at or around the electroweak scale, these gravitational waves may be detectable by future missions such as LISA. This can indirectly provide a probe of particle physics beyond the Standard Model, complementary to future colliders. In this talk I will discuss the processes that make this possible, and present some new simulation results for strong phase transitions showing how vorticity is generated.

Tuesday, March 3, 2020, 2:30 pm

Cosman Seminar Room

Center for Theoretical Physics

Building 6C, Room 6C-442

Massachusetts Institute of Technology

Refreshments at 2:00 in the same room