

Possible subjects for Master Theses

I. Solutions of the Boltzmann equation for delayed reheating

This is a particle cosmology project that aims at detailed investigation of solutions for the evolution equations for an inflaton, radiation and dark matter. Special emphasis should be directed towards regions of parameter space corresponding to resonances and thresholds while solving the Boltzmann for dark matter density. [1-11].

II. CP-violating invariants and effective dim-6 operators for physics beyond the Standard Model

This project is supposed to find and classify generalizations of the Jarlskog invariant within effective field theory approach to beyond the Standard Model physics. The project has scientific potential. [12-13]

III. Partial wave decomposition for dark-matter annihilation amplitudes; general treatment and illustrations

The thesis is supposed to systematize application of partial wave decomposition for the early universe dark matter annihilation amplitudes. The project has scientific potential. [1-10,14-15]

Literature

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