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**EHU QC**

EHU Quantum Center

## Theoretical Physics Seminar Series

# Characterizing the post-inflationary dynamics of the early universe with CosmoLattice

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**Abstract:** In my talk I will discuss several aspects of the primordial dark age of the universe: the era connecting the end of inflation with the later thermal evolution. I will first review (p)reheating after inflation. I will then show how numerical simulations allow us to characterize the long-term evolution of the energy distribution and equation of state during reheating, and to eliminate the uncertainty in theoretical predictions for inflationary observables. I will also present CosmoLattice: a new code for lattice simulations of classical field theories in an expanding universe. The code is capable of simulating scalars, gauge fields and tensor perturbations (gravitational waves), and is currently being used in the study of various early universe scenarios. I will present its basic features and future updates.

**Prof. A. Chamorro Seminar Room, Theoretical Physics Seminar Room**

**Wednesday, April 26th, 2023**

**Time: 11:40 am**