

Abstract Submitted
for the APR15 Meeting of
The American Physical Society

Numerical loop quantum cosmology: some recent results PARAMPREET SINGH, Louisiana State University — We will discuss some of the recent results obtained using numerical techniques in loop quantum cosmology. We focus on two models: an isotropic universe with a negative potential and the Bianchi-I vacuum spacetime. Quantum evolution with different kinds of states in these spacetimes shows the resolution of singularities and existence of quantum bounce. In the case of the negative potential, loop quantum universes undergo a cyclic evolution with relative fluctuations tightly bound in different cycles. In the case of the anisotropic model, the shear scalar is shown to be finite in the entire evolution. We also discuss the validity of the effective spacetime description for these spacetimes.

Parampreet Singh
Louisiana State University

Date submitted: 09 Jan 2015

Electronic form version 1.4