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Phenomenological implications of modified loop quantum cosmology[1] BAOFEI LI, Baylor University, PARAMPREET SINGH, Louisiana State University, ANZHONG WANG, Baylor University — In this talk, I will present the phenomenology of modified loop quantum cosmology when gravity is minimally coupled to a scalar field. Due to the quantization ambiguities, two different effective Hamiltonians other than the standard one in loop quantum cosmology (LQC) can be derived as candidate theories of loop cosmology in a spatially flat Friedmann-Lemaitre-Robertson-Walker universe. Although in these modified models, the big bang singularities are still replaced by the quantum bounce, there are both qualitative and quantitative differences as compared with the standard loop quantum cosmology. I will first focus on the distinctive features of the background evolution of the universe in modified loop cosmological models and then talk about the primordial scalar and tensor power spectra in these models.

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