Abstract Submitted for the APR21 Meeting of The American Physical Society

Discrete gravity from effective spin foam models¹ SETH ASANTE, BIANCA DITTRICH, Perimeter Institute, HAL HAGGARD, Bard College — Recently, a new and 'effective family of spin foam models describing quantum gravity dynamics with discrete area spectrum have been introduced. These models are built directly from the geometrical variables of spacetime and have been shown to be amenable to numerical computations. The simplicity of these models allows to clarify some issues appearing in semi classical analysis of generic spin foam models. I will describe first steps toward testing quantum gravity equations from these models on non-trivial spacetime boundaries. The numerical evaluations reveal a very rich structure of amplitudes and also the expectation values of certain observables results from an interplay between various parameters of the model.

¹This work is supported by Perimeter Institute for Theoretical Physics. Research at Perimeter Institute is supported in part by the Government of Canada through the Department of Innovation, Science and Economic Development Canada and by the Province of Ontario through the Ministry of Colleges and Universities.

> Seth Asante Perimeter Institute

Date submitted: 09 Jan 2021

Electronic form version 1.4