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Squeezed vacua in loop quantum gravity LUCAS HACKL, EUGENIO BIANCHI, JONATHAN GUGLIELMON, NELSON YOKOMIZO, Pennsylvania State Univ — Semi-classical states in quantum gravity are expected to exhibit long range correlations. In order to describe such states within the framework of loop quantum gravity, it is important to parametrize states in terms of their correlations. In this talk, I will introduce a new class of states with prescribed correlations, called squeezed vacua. They can be naturally understood in the bosonic Hilbert space representation where they are generated in two steps. First, we squeeze the Ashtekar-Lewandowski vacuum via the action of a quadratic exponential and second, we project the resulting states onto the kinematical Hilbert space of Loop quantum gravity. I will give explicit examples on how to construct states that are peaked on some classical geometry, but whose quantum fluctuations exhibit long range correlations.

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