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Adiabatic vacua from linear complex structures LUCAS HACKL, EUGENIO BIANCHI, MIGUEL FERNANDEZ, MONICA RINCON RAMIREZ, Pennsylvania State Univ — Adiabatic vacua play an important role as initial quantum states of gravitational perturbations on a dynamical spacetime. Adiabaticity requires that the vacuum evolves slowly under the background dynamics and the standard method requires a WKB approximation to find the vacuum order by order. In this talk, I present an alternative approach that utilizes the concept of a linear complex structure to label field theory vacua and allows one to find the adiabatic vacua from a simple recursion relation. I will do this explicitly for FLRW spacetimes and comment on its relation to the adiabatically renormalized energy-momentum tensor.

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