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Semiclassical series expansion for wavefunctions in Schroedinger quantum field theories RACHEL MAITRA, Wentworth Institute of Technology — In this talk, I will describe a semiclassical expansion for quantum wavefunctions in which the leading order semiclassical state is a decaying exponential, and higher-order quantum corrections are given by a recursive sequence of linear differential equations. This expansion technique has broad applicability not only to Schroedinger quantizations of finite-dimensional mechanics problems, but to canonical (Schroedinger) quantum field theories. I will discuss a range of examples from anharmonic oscillators to scalar field theory and Yang-Mills theory, as well as possible extensions to canonical quantum gravity.

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