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Saddlepoint Search: Continuous Dimer Method ETHAN CROWELL, MICHAEL FORBES, Department of Physics and Astronomy, Washington State University — Determining saddle points for a given potential or energy functional is of interest in the study of transition pathways in various fields (chemistry, nuclear fission, etc.) However, this can be quite difficult for many body systems. Henkelman *et al* developed a dimer method for doing this that uses only the first derivatives of the potential, thus making the method scale well with the number of dimensions of the system. Here we develop a continuous extension of the dimer method so that the evolution is unitary. This allows us to apply the dimer method to energy functionals of particle density without having to reorthogonalize or renormalize the wavefunctions.

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