

Abstract Submitted  
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**The effect of cusps in time-dependent quantum mechanics<sup>1</sup>**  
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College of the City University of New York, KIERON BURKE, University of Cal-  
ifornia, Irvine — Spatial cusps in initial wavefunctions can lead to non-analytic  
behavior in time. We suggest a method for calculating the short-time behavior in  
such situations. For these cases, the density does not match its Taylor-expansion in  
time, but the Runge-Gross proof of time-dependent density functional theory still  
holds, as it requires only the potential to be time-analytic.

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