

*Variational proof of the existence of brake orbits in the planar  
2-center problem*

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The purpose of the talk is to show the existence of symmetric brake orbits in the 2-center problem. We first start with introduction to state the background and the main result. Next we provide the variational formulation and show the existence of a minimizer. Finally we show that the minimizer is neither trivial solutions nor collision solutions for some cases by investigating the properties of the value of the action functional.