

Abstract Submitted  
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**Math for Mapping Spacetime** JEANDREW BRINK, Caltech — One of the important science objectives for LISA is to quantitatively map the strong field regions around compact objects using Extreme-Mass-Ratio Inspirals (EMRIs). While this idea has been shown to be possible in principle, in practice only inspirals in a Kerr spacetime have been studied in detail. A spacetime mapping algorithm for an EMRI inspiral into generic compact object is formulated using ideas from integrable systems. Aspects of theoretical development required to make a mathematical spacetime mapping machine an implementable reality are discussed.

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