

Norton's Slippery Slope

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Abstract

In my contribution to the Symposium ("On the Vagaries of Determinism and Indeterminism"), I will identify several issues that arise in trying to decide whether Newtonian particle mechanics qualifies as a deterministic theory. I'll also give a mini-tutorial on the geometry and dynamical properties of Norton's dome surface. The goal is to better understand how his example works, and better appreciate just how wonderfully strange it is.

Keywords: determinism, Newtonian particle mechanics, Painleve conjecture

Subjects: [Specific Sciences: Physics: Classical Physics](#)
[General Issues: Determinism/Indeterminism](#)

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Additional Information: The paper, in part, assumes familiarity with John Norton's "dome example", as described in "The Dome: An Unexpectedly Simple Failure of Determinism". The latter is available from this Archive.