



# PHYSICS AND ASTRONOMY SEMINAR

## Dr. Jeff Bowen

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# “Closed Timelike Curves and the Initial Value Problem”

### Abstract

The Initial Value Problem of classical General Relativity seeks to solve Einstein's equations by specifying data on an initial spacelike slice, and then using the evolution equations to propagate the data and solve for the entire spacetime. Following Ori (2007), I describe a spacetime that contains physically reasonable “dust”, is asymptotically flat, and contains closed time-like curves. I am able to provide exact solutions for the 3-metric and extrinsic curvature throughout the initial spacelike hypersurface.

Thursday, October 31, 2013

2:30 p.m.

Clearihue Building

Room C111