

Abstract Submitted  
for the OSF05 Meeting of  
The American Physical Society

**Matrix Models, String Theory, Field Theory, ... and the Big Bang?** JEREMY MICHELSON, University of Kentucky — In String Theory, there are many examples in which non-gravitational (field) theories are equivalent to gravitational theories, in a manner sometimes referred to as holography. Under certain circumstances, the non-gravitational theory is better suited for calculations of phenomena in the equivalent gravitational theory. Since it can be notoriously difficult to calculate in gravitational theories, the mapping to the simple(r) quantum mechanical matrix model is very important. I will discuss one interesting class of gravitational theories and the corresponding quantum mechanical results. This class includes theories which model the big bang singularity, and for which the corresponding quantum mechanics is under good control at the time of the big bang.

Jeremy Michelson  
University of Kentucky

Date submitted: 29 Sep 2005

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