

# NYC Dynamics Seminar at CUNY & Yeshiva University

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**Edward Belbruno** (Yeshiva University and Princeton University)

*will speak on*

## **Stochastic Regularization of the Big Bang Singularity**

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**Thursday, October 26th, 5:30pm**

Lectures will last 1 hour and be followed by questions and/or discussion.

**Yeshiva University, 215 Lexington Ave, Room 312**

On the SW corner of Lexington Ave and 33rd Street. You will need to sign in.

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*Abstract:*

The Friedmann differential equations, that model the expansion of the universe, are not defined at the Big Bang Singularity. These equations are modified by including random perturbations modeled by Brownian motion. A method is described on how to regularize these differential equations using stochastic methods. It is proven that solutions exist from a contracting universe to an expanding one if and only if a key parameter takes on a value from a special set of co-prime numbers at the Big Bang. It is also proven that the universe expansion variable can perform random fluctuations.

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Seminar website: <http://nycdynamics.org/>