

# SEMINAR ANNOUNCEMENT

## Drip Paintings and Fractal Analysis

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**Abstract:** In this talk I will first provide a brief overview of my research program in cosmology and fundamental particle physics. My recent work has focused on phase transitions in the early universe, the nature of the mysterious dark matter that is believed to comprise the bulk of the universe, and the development of a new model of elementary particles that may describe neutrinos.

In the main part of the talk I will describe an unusual foray into art authentication. Fractal analysis has recently been used in a debate over the authentication of a cache of newly discovered paintings that may be the work of Jackson Pollock. We have critically examined the validity of fractal analysis as an authentication method [1, 2]. As a byproduct we have uncovered two new results in fractal mathematics [2]. The results of these investigations will be presented.

[1] Katherine Jones-Smith and Harsh Mathur, *Nature* 444, E9-10 (2006).

[2] Katherine Jones-Smith, Harsh Mathur and Lawrence Krauss, *Physical Review E* 79, 046111 (2009).

**. Wednesday, November 18<sup>th</sup>, 2009**

**12:00 – 1:00 pm**

**Room 117**

*Pizza and refreshments will be served before the seminar.*