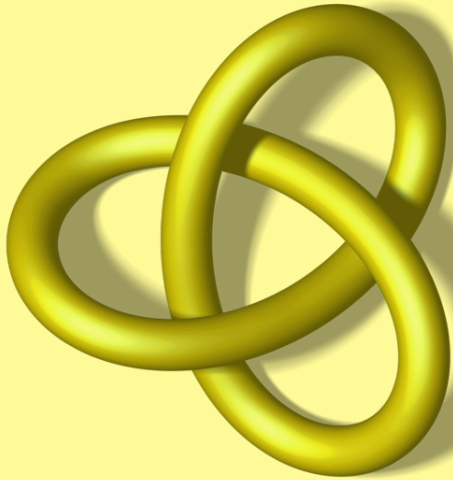


An Undergraduate Lecture Series



Announcing

A Seminar Presentation

on Thursday

December 1, 2016

at 3:00 pm in

North Hall 102

at The University of New Haven

Derivation of parametric equations of the expansion of a closed universe with torsion

— **Prastik Mohanraj**

Engineering and Science University Magnet School, Hamden CT

Abstract:

Using the Friedmann equations for a closed universe with spin and torsion, parametric equations for scale factor and time are derived. The basic models given by the Friedmann equations, Einstein-Cartan gravity, and general cycloidal/trochoidal models will be presented, leading to the derivation of the parametric equations. These equations are analyzed in different eras of the evolution of the universe: the torsion-dominated era (near the Big Bounce), the radiation-dominated era (relativistic early universe), the matter-dominated era (non-relativistic universe with dark matter), and the dark-energy-dominated era (late universe).

Further Information

For further information, please contact Angie Domschine at the Department of Mathematics and Physics, Office: Maxcy 204, 203-932-7250, ADomschine@newhaven.edu.