

# SOLITONS OF THE SPACELIKE MEAN CURVATURE FLOW IN GENERALIZED ROBERTSON-WALKER SPACETIMES

HENRIQUE FERNANDES DE LIMA

## **Abstract**

In this talk, we will deal with solitons of the spacelike mean curvature flow in a generalized Robertson-Walker (GRW) spacetime. Under suitable constraints on the warping function and on the curvatures of the Riemannian fiber of the GRW spacetime, we will apply suitable maximum principles in order to obtain nonexistence and uniqueness results concerning these solitons. Applications to standard models of GRW spacetimes, namely, the Einstein-de Sitter spacetime, steady state type spacetimes, de Sitter and anti-de Sitter spaces, will be given. Furthermore, we will establish new Calabi-Bernstein type results related to entire spacelike mean curvature flow graphs constructed over the Riemannian fiber of the GRW spacetime.