Canadian Association of Physicists
Association canadienne des physiciens et physiciennes

Contribution ID: **2875** Type: **Poster (Non-Student) / Affiche (Non-étudiant(e))**

23 - Discrete Self-Similar Solutions in Bianchi-IX Spacetimes

Tuesday 4 June 2019 16:49 (2 minutes)

It is known that the Friedmann-Robertson-Walker cosmologies exhibit continuous self-similarity. In addition critical gravitational collapse with non-zero energy momentum tensor sources in asymptotically flat space-times are discretely self-similar. It will be shown that discrete self-similarity can arise in the evolution of spatially homogeneous but anisotropic vacuum cosmological models.

The lowest order self-similarity is associated with period-3 oscillations which indicate that the generic time dependence will be chaotic. These solutions also lead to parameters that are related to the golden ratio. Self similar oscillations also exist with higher periodicities and these are thought to lead to parameters related to the so-called "silver ratios".

Author: Dr HOBILL, David (University of Calgary)

Presenter: Dr HOBILL, David (University of Calgary)

Session Classification: DTP Poster Session & Student Poster Competition Finals (4) | Session d'affiches DPT et finales du concours d'affiches étudiantes (4)

Track Classification: Theoretical Physics / Physique théorique (DTP-DPT)