#### **SAIP2016**



Contribution ID: 60

Type: Oral Presentation

# Anti-Newtonian cosmological solutions in fourth-order gravity

Tuesday, 5 July 2016 10:20 (20 minutes)

# Abstract content <br> &nbsp; (Max 300 words)<br><a href="http://events.saip.org.za/getFile.py/starget="\_blank">Formatting &<br>Special chars</a>

A class of perfect-fluid ''anti-Newtonian" cosmological solutions in higher-order gravity will be discussed. In particular, we present the integrability conditions of such gravity models using the covariant consistency analysis formalism. We show that, unlike in General Relativity, these anti-Newtonian solutions exist subject to the solution of an integrability condition equation we derive, and that they are not silent cosmological models. We also present the set of evolution equations governing the linear perturbations of matter, expansion and Ricci scalar for this class of models.

#### Apply to be<br> considered for a student <br> &nbsp; award (Yes / No)?

No

#### Level for award<br>&nbsp;(Hons, MSc, <br> &nbsp; PhD, N/A)?

No

## Would you like to <br> submit a short paper <br> for the Conference <br> Proceedings (Yes / No)?

Yes

## Please indicate whether<br>this abstract may be<br>published online<br>(Yes / No)

Yes

Primary author: Dr ABEBE, Amare (North-West University)Presenter: Dr ABEBE, Amare (North-West University)Session Classification: Astrophysics (1)

Track Classification: Track D1 - Astrophysics