# Cosmology with the SKA and MeerKAT: Probing Cosmic Structure formation via Interacting fluids

G O Okeng'o-PhD Student

Department of Physics

UNIVERSITY OF THE WESTERN CAPE

**Supervisor: Prof Roy Maartens**

## ABSTRACT

The upcoming South African Karoo Array telescope (MeerKAT) and the Square Kilometer Array (SKA) telescope, will generate huge amounts of high precision and high redshift data on the galaxy distribution, that will be useful for testing current structure formation models and the nature of dark energy. In this paper, we present results from our work that considers a new framework in which we split the cold matter into a dark matter (neutralino) halo component and a baryonic and dark matter fluid component that is accreted by the halos. We use results from the halo model to characterize the rate of mass transfer from the fluid to the halos, and compute the density contrasts in the two components and in the total matter, comparing this with the standard Lambda Cold Dark Matter model.