

The evolution of faint radio sources in the XMM-LSS field

K. McAlpine¹

¹ *University of the Western Cape, Robert Sobukwe Road, Bellville 7535*

Abstract

One of the primary goals of the SKA continuum surveys is to map the cosmic evolution of star-forming galaxies and AGN out to high redshift. Achieving these goals relies on multi-wavelength complementary datasets to separate the AGN and star-forming galaxy contributions to the faint radio population and to obtain photometric redshift estimates for a large fraction of the detected radio sources. In this talk I will present a multi-wavelength investigation of the evolution of faint radio sources out to $z \sim 2.5$. This study combines a 1 square degree VLA radio survey, complete to a depth of $100\mu\text{Jy}$, with accurate 10 band photometric redshifts from the VIDEO and CFHTLS surveys. The results indicate that the radio population experiences mild positive evolution out to $z \sim 1.2$ increasing their space density by a factor of ~ 3 , consistent with results of several previous studies. Beyond $z = 1.2$ there is evidence of a slowing down of this evolution. Star-forming galaxies drive the more rapid evolution at low redshifts, $z < 1.2$, while more slowly evolving AGN populations dominate at higher redshifts resulting in a decline in the evolution of the radio luminosity function at $z > 1.2$