

IAF SYMPOSIUM ON ONGOING AND NEAR FUTURE SPACE ASTRONOMY AND  
SOLAR-SYSTEM SCIENCE MISSIONS (A7)  
Interactive Presentations - IAF SYMPOSIUM ON FUTURE SPACE ASTRONOMY AND SPACE  
PHYSICS (IP)

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TRACING STAR FORMATION IN GROUPS AND FILAMENTS AROUND A YOUNG, ACTIVE  
GALAXY CLUSTER AT A REDSHIFT OF Z 1.46.

**Abstract**

XMMXCS J2215.9-1738 is one of the most distant spectroscopically confirmed clusters discovered in the X-ray band at a redshift  $z = 1.46$ . It is unusual in that it hosts several starburst galaxies in its core. We will use optical/IR data taken from the Canada France Hawaii Telescope Legacy Survey Deep 4 (CFHTLS D4) field, along with recent MeerKAT radio observations to survey the large-scale environment around the cluster and study the environmental effects on the star formation of galaxies in groups and filaments around this cluster. This will be the first study that uses radio continuum data to calculate the SFR of J2215 since previous studies have done so using Oii emission (Hayashi et al., 2010) or IR luminosities (e.g Hilton et al., 2009; Ma et al., 2015; Stach et al., 2017). Our results show a filament structure 18.3 Mpc long located along the east to the south of the cluster. The filament center is 4.41 Mpc ( $5.5R_{200}$  where  $R_{200}$  is approximately the cluster virial radius 0.8 Mpc) away from the cluster center. Our results qualitatively agree well with the filament structure that is seen in Hayashi et al. (2011) who used Subaru/MOIRCS data (Oii emitters) to trace the filament. From the SFR density map we conclude that the filament-like structure contains some star-forming galaxies.