



### **Deepest uGMRT band-3 observations of XMMLSS region**

Ishwara Chandra CH<sup>(1)</sup>, Stefano Andreon<sup>(2)</sup> and Claudia Cicone<sup>(2)</sup>

(1) NCRA-TIFR, Pune University Campus, Ganeshkhind, Pune – 411007, India; email: ishwar@ncra.tifr.res.in

(2) INAF-OAB, Bera, Milan, Italy

Here we present deepest uGMRT band-3 (250 - 500 MHz) image of the high-redshift cluster, JKCS01 in the field of XMMLSS. The field was observed with uGMRT band-3 using a bandwidth of 200 MHz with band center of 400 MHz. Total observing time was 25 hours, consisting of three observing sessions. The data was analysed using the casa based pipeline in nearly automated way. The final resulting image has an rms of 15 microJy/beam at band center of 400 MHz, making this the deepest image at this band, at a resolution of about 6 arcseconds. This rms is within a factor of two of thermal noise, achieved through routine processing using standard features in CASA. Due to this excellent sensitivity, the source density is in excess of 1000 sources per square degrees. Several faint submJy sources have optical counterparts with photometric redshift larger than 1. The median spectral index between 400 MHz and VLA 1400 MHz is about 0.8, consistent with the values for other deep fields. Such a deep image is an excellent preview of science with SKA1-mid band.