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## Observation of a nearby filament of galaxy clusters - 15'

*Wednesday, 5 December 2018 10:30 (15 minutes)*

During this talk I intend to present radio observations with the Sardinia Radio Telescope (SRT) of a region of the sky of  $8^\circ \times 8^\circ$ , likely associated with an over-density traced by nine massive galaxy clusters at  $z \approx 0.1$ . The combination of the SRT data with observations from the NRAO VLA Sky Survey revealed the presence of 28 new diffuse synchrotron radio sources with radio emissivity and X-ray luminosity 10-100 fainter than known diffuse synchrotron cluster sources (radio halos and relics). The comparison with magneto-hydro-dynamical simulations suggests that this population is potentially the tip of the iceberg of a class of diffuse large-scale synchrotron sources associated with the filaments of the cosmic web and corresponding to magnetic field strengths of  $\sim 20\text{-}50$  nG.

**Primary authors:** VACCA, Valentina (Istituto Nazionale di Astrofisica (INAF)); Dr MURGIA, Matteo (INAF-Osservatorio Astronomico di Cagliari); GOVONI, Federica; LOI, Francesca (Università di Bologna & INAF)

**Presenter:** VACCA, Valentina (Istituto Nazionale di Astrofisica (INAF))

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