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Elisabetta Liuzzo: Radio Galaxies with the Event Horizon Telescope

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Event Horizon Telescope (EHT) represents an unique Earth-sized very long baseline interferometry (VLBI) array observing at 1.3 mm able to catch AGN black hole (BH) shadows. The angular resolution achieved by the EHT is unprecedented, being of the order of 25 microarcsec, and it allowed the first BH imaging at event horizon scales of the supermassive black hole M87 and Sgr A. Total intensity and polarisation analysis are performed by EHT, providing direct evidence for the presence of supermassive black holes in centres of AGN and essential new information about structure of magnetic field lines near the event horizon. In addition to M87 and Sgr A, EHT observations are also unveiling the launching and initial collimation region of extragalactic radio jets in nearby sources, such as Cen A and 3C 279, and NRAO 530 down to the unexplored 10-200 gravitational radii scales.

On behalf of the EHT Collaboration, I will review the published EHT results, highlighting the important astrophysical impact of these VLBI studies in the radio galaxies domain, from the possibility to explore gravity in its most extreme limit to putting tight constraints on the theoretical interpretations of the relativistic jet-launching processes.