

Plenary Talk

## FAST RADIO TRANSIENTS: PERSPECTIVES WITH THE SKA

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In this talk I will describe the transient radio sky, and the many discoveries made in the last decade in this field. In particular I will focus on sub-second time scale transients, including the so-called fast radio bursts (FRBs). I will overview the prevailing ideas for what causes the FRB events, as well as outlining their utility as precision tools for cosmology. Despite all of the recent discoveries in this field the transient parameter space is still relatively unsearched, with efforts having been limited by the existing facilities and the necessary backend hardware. The SKA will be capable of real time wide-field fast transient searches over a wide parameter space. Thus it will exploit the vast potential for discovery, and make huge strides forward, in transient science. The SKA has fast transient science at its heart, as one of the high priority science objectives of the observatory. The SKA's multi-wavelength synergies with other telescopes will also complement and be vital to this effort. I will detail the expected discovery yields, other potential finds as we explore the unknown, and what these can tell us about the Universe.