

# The Third National Workshop on the SKA Project - The Italian Route to the SKAO Revolution



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## Prepping up for the SKA Fast Radio Bursts era using the Northern Cross

*Tuesday, 5 October 2021 11:20 (20 minutes)*

Fast Radio Bursts are enigmatic, millisecond-long, bright (typically 1-100 Jy) radio flashes of (mostly) cosmological origin (up to  $z \sim 2$ ). At the time of writing, a few hundreds of events have been observed with a large range of properties in terms of fluences, spectra, time smearing and characteristics of the host galaxies - when localized. Their origin remains indeed largely debated, although an unmistakable connection between magnetars and (some) FRBs has been established recently. In the future, the SKA will provide observability over two frequency decades with simultaneous, superb localization, ie. FRB cosmology.

In this talk I will review the Northern Cross FRB project, the ongoing effort to equip and use the Northern Cross (NC), the oldest Italian radio telescope, to observe FRBs. The NC North-South arm has been upgraded with state-of-the-art electronics and backends suitable for FRB observations. Commissioning activities started in 2019. I will present the current project status, highlighting the first FRB detections. Finally I will describe the future path, including the equipment of the 64 cylinders of the North-South arm that will lead to a low frequency telescope similar to CHIME and, therefore, an effective Italian FRB survey machine that will be able to give the Italian FRB community a leading role in the SKA era.

### Research area

Transients

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