



## **The Impact of SKA on Galactic Science: a glimpse at the Galactic plane with SKA precursor**

Francesco Cavallaro<sup>\*(1)(2)(3)</sup>, SCORPIO team<sup>(3)</sup>

(1) University of Cape Town, Rondebosch, Cape Town, 7700, South Africa

(2) Inter-university Institute for Data Intensive Astronomy, IDIA

(3) Istituto Nazionale di Astrofisica, Osservatorio di Catania INAF-OACT, Via Santa Sofia 78, 95123 Catania

About 50 – 70% of the first five years of SKA operations will be devoted to KSPs, and probably also to Generic Surveys that maximize commensality to a wide range of scientific objectives. There are already several proposed KSPs focused on Galactic Science and we foresee many other KSP concepts being submitted under the breadth of Our Galaxy SWG. SKA, providing better sensitivity and angular resolution than any of ongoing/planned surveys of the Galactic plane, will give the opportunity to create a sensitive wide-field atlas of Galactic radio emission and to address several topics in the field of Galactic radio astronomy, concerning a lot of different types of sources, from the pointlike radio stars to the large extended supernova remnants. The Galactic plane has always been a formidable challenge for radio interferometers. A concentration of extended sources and the Galactic diffuse emission make it difficult to obtain a radio map devoid of imaging artefacts. This hampers the imaging performance of the instrument, reducing the quality of the final images (in terms of signal-to-noise ratio) and makes data reduction (in particular self calibration) and analysis a complicated and demanding task. In this paper we summarize our ongoing work, carried out with SKA precursors, in particular ASKAP and MeerKAT, aimed at achieving skills and expertise in the run-up to the development of the full SKA to be ready and competitive for leading and participating to a SKA KSP dedicated to Galactic studies and for a full exploitation of the survey data.