

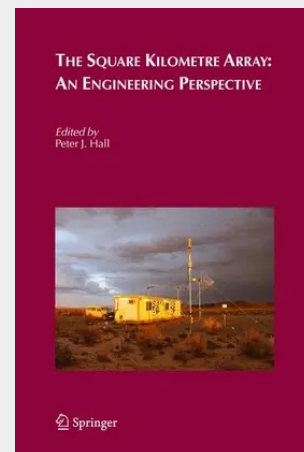
The Square Kilometre Array: An Engineering Perspective

The Square Kilometre Array (SKA) Project is a global project to design and construct a revolutionary new radio telescope with of order 1 million square meters of collecting area in the wavelength range from 3m to 1cm. It will have two orders of magnitude greater sensitivity than current telescopes and an unprecedented large instantaneous field-of-view. These capabilities will ensure the SKA will play a leading role in solving the major astrophysical and cosmological questions of the day (see the science case at www.skatelescope.org/pages/page_astronom.htm). The SKA will complement major ground- and space-based astronomical facilities under construction or planned in other parts of the electromagnetic spectrum (e.g. ALMA, JWST, ELT, XEUS,...). The current schedule for the SKA foresees a decision on the SKA site in 2006, a decision on the design concept in 2009, construction of the first phase (international pathfinder) from 2010 to 2013, and construction of the full array from 2014 to 2020. The cost is estimated to be about 1000 M.

The SKA Project currently involves 45 institutes in 17 countries, many of which are involved in nationally- or regionally-funded state-of-the-art technical developments being pursued ahead of the 2009 selection of design concept. This Special Issue of Experimental Astronomy provides a snapshot of SKA engineering activity around the world, and is based on presentations made at the SKA meeting in Penticton, BC, Canada in July 2004. Topics covered include antenna concepts, software, signal transport and processing, radio frequency interference mitigation, and reports on related technologies in other radio telescopes now under construction. Further information on the project can be found at www.skatelescope.org.

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