

IEEE AP-S Distinguished Lecture (Hong Kong Chapter)

The SKA and Precursors — Extreme Antenna Engineering

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Time: 04:00 pm to 05:00 pm (Hong Kong, UTC+8:00)

Venue: Online

Registration link: <https://events.vtools.ieee.org/event/register/279824>

Abstract

The Square Kilometre Array (SKA) is one of the most ambitious international mega-science projects currently in progress. This paper focusses on the antenna engineering required, looking in particular at the South African MeerKAT and Australian MWA precursor (prototype) telescopes, drawing on the presenter's involvement in the international SKA project over the last decade.

Biography



Professor David Bruce Davidson is a Fellow of the IEEE. He received the B.Eng, B.Eng (Hons), and M.Eng degrees (all cum laude) from the University of Pretoria, South Africa, in 1982, 1983, and 1986 respectively, and the Ph.D. and D.Eng. degrees from Stellenbosch University, South Africa, in 1991 and 2017 respectively. From 1985 to 1988 he was with the Council for Scientific and Industrial Research, Pretoria, South Africa. From 1988 until 2017, he was with Stellenbosch University, South Africa; from 2011-17, he held the South African Research Chair in Electromagnetic Systems and EMI Mitigation for SKA there and was also a Distinguished Professor. As of 2018, he joined Curtin University, Perth, Western Australia, where he is presently Engineering Director of the Curtin Institute of Radio Astronomy, and holds the Chair of Radio Astronomy Engineering.

Prof Davidson's main research interest through most of his career has been computational electromagnetics (CEM) and its applications in RF and microwave engineering, and he has published extensively on this topic. He was also closely involved in the development of FEKO, a widely-used EM simulation tool. In recent years, his interests have expanded to include engineering electromagnetics for radio astronomy. He has authored around 250 technical journal articles and conference papers in the areas of computational electromagnetics, high-performance computing, antenna design, electromagnetic compatibility and radio astronomy. He is the author of "Computational Electromagnetics for RF and Microwave Engineering" (Cambridge Univ. Press, 1st ed, 2005, 2nd ed., 2011), and he is a co-author of "Phased Arrays for Radio Astronomy, Remote Sensing, and Satellite Communications" (Cambridge Univ. Press, 2018).

Prof Davidson's full bio: https://www.ieeeaps.org/index.php?option=com_content&view=article&id=499

*** ALL ARE WELCOME ***

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