# Propagation Measurements and Models for 5G

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**Abstract**

Several frequency bands between 24-86 GHz were identified by the World Radiocommunications Conference for possible allocation for 5G. Various propagation measurements and models for the anticipated scenarios were conducted by different administrations around the world. Using the multi-band channel sounder developed at Durham University measurements were conducted in indoor and outdoor suburban and residential environments for models in ITU-R P.1238 and ITU-R P. 1411, and outdoor to indoor loss to estimate building entry loss for the model of ITU-R P. 2109. Ongoing studies include loss due to the presence of clutter for short ranges and the impact of rain on millimetre wave links for building to building scenario in the 26 GHz and 70 GHz bands.

**Bio**

Sana Salous holds the Chair of Communications Systems at Durham University since 2003. She has radio propagation experience from high frequency (HF) to millimeter wave frequency bands. To support these studies she has developed novel channel sounders based on digital frequency sweep techniques. She acted as Chair of Commission C of the International Union of Radio Science (2014-2017) and co-chair of the Working Group on Radio Channels in the COST Action IRACON. She is a member of the UK delegation to the Study Group 3 of the International Telecommunications Union and a regular contributor to working party 3K. She is also Editor in Chief of the journal Radio Science.