

How to simplify ultra wide band radio channel models ?

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Ultra wide band (UWB) channels have been intensively investigated over the last decade, triggered by the expected bright future of UWB communications. Unfortunately, the extra degree of freedom provided by the frequency -or time- parameter is also an extra degree of complexity, which makes the elaboration of channel models further challenging. The characteristics of the devices are rarely accounted for, while they critically influence the radio link quality. Variations such as multiple antennas make things even worse, whereas the increasing penetration of wireless devices in daily life generates new uses and urges for new models. The consequence of this complexity is either a need to spend enormous amounts of effort to reach an adequate level of accuracy and representativeness, or an acceptance for the models to be approximate and partially suited to the requirements. Should we accept this frustrating choice, or should we try to better identify the channel modelling needs and evaluate where efforts must be concentrated ? The presentation will address these issues and will attempt some responses.



Biography - Alain Sibille

Alain Sibille graduated from Ecole Polytechnique (1977) and from Telecom-ParisTech (1979) in France and he obtained the PhD/habilitation degree from University of Paris 7 in 1985. He first conducted basic research within France-Telecom R&D on semiconductor physics and devices and later as a part time independent consultant on radio over fibre advanced technologies. He moved to ENSTA-ParisTech, where he headed the Electronics and Computer Engineering department from 1995 to 2010, then to Telecom-ParisTech, where he is currently professor and Vice-Chair for Research of the Communications & Electronics Department. His scientific interests lie in ultra wide band communications and systems, and in the connections between antennas, channels, and signal processing. Prof. Alain Sibille chaired the European Wireless Conference 2007 in Paris and co-chaired the TPC of IEEE-PIMRC 2008. He has been a national delegate in the European Cooperation Actions COST 273 and COST 2100, chairing the "Radio Channel" WG, and he is currently a national delegate and steering committee member within the ongoing Action COST IC 1004 "Cooperative Radio Communications for Green Smart Environments". He is also involved in

URSI-France as Secretary General and Vice Chair of Commission C "Radiocommunications and Signal Processing Systems".