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—  
Dipartimento  
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**DII**

## SEMINAR

Wednesday 11 July 2018, 10:30 AM, Room 160/3  
Facoltà di Ingegneria, Via Breccie Bianche 12, Ancona

# Dynamics and nonstationarity of propagation in reverberation chambers

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### Topics:

- Part I: Reverberation Chambers;
- Part II.a: Indoor Multipath Propagation;
- Part II.b: Intervehicular Communication.

**Abstract:** In this seminar, the stochastic modelling and analysis of fields inside dynamic multipath propagation environments will be addressed. Emphasis is placed on how varies types of imperfections in echoic or anechoic enclosures. In addition, we demonstrate the effects of rate of fluctuation of fields through digital modulation and the continuous variation of boundary conditions, leading to pronounced nonstationarity. Associated stochastic differential equations and Fokker-Planck equations are derived, which are shown to enable the derivation of transition probabilities in the presence of finite relaxation times.

**Luk R. Arnaut** graduated from the University of Ghent, Ghent, Belgium, and received the M.Sc. and Ph.D. degrees in electronic engineering from the University of Manchester (UMIST), Manchester, U.K., in 1991 and 1994, respectively. He was a Research Associate with UMIST, including secondments to the Defence Research Agency (QinetiQ) and the Naval Research Laboratory, Washington, DC, USA, involved with theoretical and experimental research on chiral metamaterials. During 1995–1996, he was a Technical Consultant to BAE Systems for its RUSSTECH program. In 1996, he joined the U.K. National Physical Laboratory, where he was a Lead Scientist working in the area of dielectric and cavity resonators, metasurfaces, electromagnetic compatibility, antennas, and communications. In 2010, he founded AKS Ltd., providing technical and scientific consultancy. In 2012, he joined the University of Nottingham. Since 2014, he has been with Queen Mary University London, London, U.K., and Beijing University of Posts and Telecommunications, Beijing, China. He is the principal author of more than 150 papers and reports and holds two patents. His current research interests include stochastic techniques in electromagnetics and wireless communications. He has served as Chairman of IEC Joint Task Force CISPR/A-SC77B on reverberation chambers and as an Editor for the IEEE Transactions on Electromagnetic Compatibility. He has received the Rayleigh Prize and the IEC 1902 Award. He is a Fellow of the Institution of Engineering and Technology, London, U.K.

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