

**Title:** Bi-Dimensional Characterization of a Wimax Radio Channel at 3.5GHz

**Author(s):** Roldao, Joao <sup>[1]</sup>; Pinho, Pedro <sup>[1]</sup>

**Source:** Proceedings of the Fourth European Conference on Antennas and Propagation

**Published:** 2010

**Conference:** 4th European Conference on Antennas and Propagation (EuCAP) **Location:** Barcelona, Spain

**Date:** Apr 12-16, 2010

**Sponsor(s):** esa; CST; FEKO; TICRA; ANSOFT; ANSYS; speag; fractus; IET; WILEY-BLACKWELL; EPFL; EUREL; UPC

**Document Type:** Proceedings Paper

**Language:** English

**Abstract:** This paper presents the characterization of an indoor Wimax radio channel using the Finite-Difference Time-Domain (FDTD) [1] method complemented with the Convolutional Perfect Matched Layer (CPML) technique [2]. An indoor 2D scenario is simulated in the 3.5GHz band (IEEE 802.16d-2004 and IEEE 802.16e-2005 [3]). In this study, we used two complementary techniques in both analysis, technique A and B for fading based on delay spread and technique C and D for fading based on Doppler spread. Both techniques converge to the same result. Simulated results define the channel as flat, slow and without inter-symbolic interference (ISI), making the application of the spatial diversity the most appropriate scheme.

**Reprint Address:** Roldao, J (reprint author) - ISEL, DEETC, Lisbon, Portugal.

**Addresses:**

[1] ISEL, DEETC, Lisbon, Portugal

**E-mail Addresses:** 26379@alunos.isel.pt; ptpinho@av.it.pt

**Publisher:** IEEE

**Publisher Address:** 345 E 47<sup>TH</sup> ST, New York, NY 10017 USA

**ISBN:** 978-84-7653-472-4

**Citation:** ROLDAO, Joao; PINHO, Pedro - Bi-Dimensional Characterization of a Wimax Radio Channel at 3.5GHz. Proceedings of the Fourth European Conference on Antennas and Propagation. ISBN 978-84-7653-472-4. (2010).