

USEEL1 - Signal processing for telecommunications

Présentation

Prérequis

Students must have strong basis in both signal processing and telecommunications

Objectifs pédagogiques

This course presents the effects of a propagation channel with multi-paths on a link performance. Then it introduces diversity receivers (in time, frequency, space). SIMO, MISO and MIMO systems are then presented with their implementations and performance. Finally equalization of frequency selective propagation channels is analyzed.

Compétences

Skills about propagation channels characterization, diversity receivers, SIMO and MIMO systems and channel equalization will be developed.

Programme

Contenu

- Synthesis of basics in telecommunications
- Propagation channels characterization and modellization
- Flat fading concept and receivers with time, frequency and space diversity at reception
- MIMO systems (spatio-temporal coding, spatial multiplexing)
- Channel equalization for frequency selective channels

Modalités de validation

- Contrôle continu
- Examen final

Description des modalités de validation

Students must have obtained at least 10/20

Bibliographie

Titre	Auteur(s)
«Fundamentals of wireless Communications », U.K. Cambridge University Press, 2005	D. Tse, P. Viswanath
"Digital Communications", Mc Graw Hill Series in Electrical and Computer Engineering, 4th Edition, 2001.	J.G. PROAKIS,

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Code : USEEL1

Unité spécifique de type cours

6 crédits

Responsabilité nationale :

EPN03 - Electroniques, électrotechnique, automatique et mesure (EEAM) / Pascal CHEVALIER

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