



PALESTRA

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Some research results on next generation optical transmission systems

Prof. Adolfo Cartaxo
(IST/IT, Lisboa, Portugal)

Abstract

Next generation optical transmission systems require optical signalling formats with reduced bandwidth in order to improve the system capacity by increasing the bit rate per channel and the wavelength division multiplexing density. In this talk, some developments on next generation optical transmission systems, achieved by our research group, will be reviewed. Emphasis of the talk will be put on signalling formats with high spectral efficiency for ultra-dense wavelength division multiplexing transmission systems, viz. optical single sideband modulation, main impairments in long-haul transmission systems and techniques used to mitigate those impairments, and a very recently proposed spectrally-efficient technique of optical label insertion and extraction for future all-optical label-switching networks.

Bio

Adolfo Cartaxo received the degree of “Licenciatura” in Electrical and Computer Engineering, the M. Sc. degree in Telecommunications and Computers, and the Ph. D. in Electrical and Computer Engineering in 1985, 1989 and 1992, respectively, from Instituto Superior Técnico (IST), faculty of engineering of Lisbon Technical University. In 1985, he joined the Department of Electrical and Computers Engineering of IST. In 1992, he became an Assistant Professor and he was promoted to Associate Professor in January 2002. He joined the Optical Communications Group of Lisbon Pole of Institute for Telecommunications as a researcher in 1992. He is now a senior researcher conducting research on dense wavelength division multiplexed systems and networks. He has authored or co-authored more than 40 journal publications (14 as first author) as well as more than 60 international conference papers. He has been leader of the IST participation in three projects of the European Union programs on R&D in the optical communications area. He has been leader of three national projects. In the past few years, he has acted as a technical auditor and evaluator for European projects. He is a Senior Member of the IEEE Laser and Electro-Optics Society and IEEE Communications Society. His main present research interests include fiber optic communication systems and networks.