



**IEEE Photonics Society (Formerly IEEE Lasers and Electro-Optics Society)
French Chapter
Seminar announcement**

Title: Flexible and cognitive optical networks enabled by coherent technologies and filterless concepts

Speaker: Professor Christine Tremblay
École de technologie supérieure, Montréal (Canada)
email: Christine.Tremblay@etsmtl.ca

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Location: TELECOM ParisTech
46 rue Barrault, 75634 Paris Cedex 13
Room/Pièce: Amphithéâtre **Saphir**

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Abstract

Filterless optical networks based on coherent transceivers and passive broadcast-and-select nodes can be considered as a cost-effective and simpler alternative to active optical switching networks based on Reconfigurable Optical Add/Drop Multiplexers (ROADMs). Filterless networks are increasingly seen as very serious candidate architectures for future networks because of their main attributes (cost-effectiveness, energy efficiency), as well as its inherent gridless, elastic, multicast and cognition capabilities. Furthermore, coherent receivers equipped with digital signal processing (DSP) are foundational technologies for flexible and cognitive optical networking owing to their dynamic impairment compensation, performance monitoring and reconfiguration capabilities.

In this talk, we will review the recent progress on the design of elastic and agile filterless optical networks for terrestrial and submarine applications and present an overview of the current research activities at the Network Technology Lab aiming at leveraging the performance monitoring capability of coherent receivers for characterizing the performance dynamics in coherent optical networks and developing performance predictive models.

Bio

Christine Tremblay is a Professor in the Electrical Engineering Department of the École de technologie supérieure (ÉTS) since 2004. She is the founding researcher and head of the Network Technology Lab, an optical layer test bed composed of 19 network nodes fully equipped with 10G-100G transmission systems for research and teaching in optical communications. Her research interests include cognitive optical networks, optical performance monitoring, as well as optical layer characterization and silicon photonics. Her team introduced the filterless network concept, a step towards more flexible cost-effective and energy-efficient WDM network architectures for core and submarine network applications. Before joining ÉTS, she held senior R&D and technology management positions at Nortel, EXFO, Roctest and the National Optics Institute (INO). She has been co-instructor for two OFC hands-on short courses on fiber characterization and polarization measurements from 2009 to 2015. She is a member of two Quebec FRQNT Strategic Clusters (Center for Advanced Systems and Communications, SYTACom; Center for Optics, Photonics and Lasers (COPL), the Optical Society of America (OSA) and the IEEE Photonics Society.

For more information, please feel free to contact:

Philippe Gallion TELECOM ParisTech

Phone: (33) 1-45-81-77-02 Fax: (33) 1-45-89-00-20 Email: gallion@ieee.org

Cedric Ware TELECOM ParisTech

Phone: (33) 1-45-81-74-85 Fax: (33) 1-45-89-00-20 Email: cedric.ware@telecom-paristech.fr

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