MASTER IN PHOTONICS
EUROPHOTONICS-POESII MASTER COURSE

PROPOSAL FOR A MASTER THESIS

2015-2016

Laboratory : D4-S107, Optical Communications Laboratory
City, Country : Barcelona, Spain

Title of the master thesis : Fiber based comb generator for optical communications applications.

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Summary of the subject (maximum 1 page) :

Optical frequency comb generators (OFCG) is a very interesting technology for generation of ultra-short pulses and optical multi-wavelength source for current WDM optical fiber communication systems.
On the other hand, applications of optical frequency combs in optical communications are recently modifying the field of optical communications. They are the base of coherent Wavelength Division Multiplexing (CoWDM) and Optical Arbitrary Waveform Generators (OAWG). A dynamic OAWG transmitter and an optical arbitrary waveform measurement (OAWM) receiver can coherently generate and receive data waveforms by dividing the total waveform bandwidth into spectral slices of manageable bandwidth. This provides an available way to scaling into 1 THz continuous bandwidth for optical communications.

Keywords : Optical frequency Comb Generators, optical fibres,

Additional information :
* Required skills : Knowledge on Laser physics and optical fibres. Basic electronics and programming capabilities, e.g. programing Arduino.

* Miscellaneous : Interest on learning at interdisciplinary fields between physics, photonics and communications.