

**Call for application for research scholarships
for post-graduate international candidates**

RESEARCH PROJECT N. 40

Title:

MOON (Multi-layer Orchestration of Optical Networks)

Scientific responsible

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Short description of the research activity

Purpose of MOON is the multilayer optimization of elastic optical networks down from the [IP layer](#), enabling full exploitation of the photonic layer - at 100 Gbps and beyond - either using the state-of-the art WDM fixed-grid, either the already standardized flex-grid. The student will take advantage of the 20-year experience of the [OptCom](#) group in modelling and simulation of physical layer in optical networks. MOON will evolve in strict interaction with the consortium [Telecom Infra Project](#) (TIP) aimed at developing open source code for network equipment. Software modules will be developed in [Phyton](#) language using [Github](#). Researchers of MOON will collaborate with companies of TIP. Such as Cisco, Facebook, Juniper Networks, Microsoft, Coriant Networks, OpeFiber, and Microsoft. A collaboration with [UTD](#) for [ProNet](#) development will be also part of MOON, as well as a collaboration with [TOP-IX](#). MOON will include also experiments that will be carried out exploiting commercial equipment and possibly operating on *real* data.

Specific requirements (experiences, skills)

- Digital communications
- Optical transmission
- First three-layer networking
- Matlab or Python code development exploiting parallel computing

Website of the research group

www.optcom.polito.it

Keywords

- Elastic optical networks
- Physical-layer-aware networking
- Network orchestration

Research Area

Electronics, Control and Telecommunication Engineering