Jeudi 25 Janvier 2024 à 14h
Attention : heure inhabituelle
Amphithéâtre Monge, Ecole Polytechnique

Serge MEIMON
ONERA, Chatillon

Using illumination patterns for retinal imaging

The first application of adaptive optics to retinal imaging, using a Flood-Illumination Ophthalmoscope (FIO), occurred more than 20 years ago. Since then, there is an ongoing quest to provide ophthalmologists with a retinal imager featuring speed, contrast, resolution, field of view, without distortion, and if possible compact and low-cost!

Optical Coherence Tomography, Scanning Laser Opthalmoscopes, Offset aperture or split detection techniques have allowed to get closer and closer to this gold standard. In our lab, we try to contribute to this effort by modernizing the historical Adaptive Optics Flood Illumination Ophthalmoscope, complementing it with a high resolution pattern projection capability. In this presentation I will show how with the right patterns, we can increase contrast and resolution, and reveal retinal structures and functions with an unprecedented precision.