Nonlinear fibre optics
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Frequency
Every 2 years

Remarque
Next time Fall 2020 - To be confirmed

Summary
Presentation of the different sources of optical nonlinearities in an optical fibre

Content
• Presentation of the different sources of optical nonlinearities in an optical fibre.
• 3rd order optical nonlinearity: 4-wave mixing, optical Kerr effect, pulse compression and soliton propagation, parametric amplification, modulation instability.
• Inelastic scatterings: spontaneous Brillouin and Raman scatterings, stimulated scatterings, amplification and lasers, distributed fibre sensors.
• Advanced applications: supercontinuum generation, optical combs, optical clocks, slow and fast light.

Keywords
Optical fibres, nonlinear optics, 4-wave mixing, stimulated scattering, fibre optics sensors, slow and fast light.

Learning Prerequisites
Recommended courses
Solid knowledge in electromagnetics, in optics and waveguiding