

**Topics in variational problems arising from models in physics,
Bedlewo 24-29 July 2022**

Speaker : Louis Jeanjean (University of Franche-Comté)

Title : Normalized solutions of L^2 -supercritical NLS equations on compact metric graphs.

Abstract : This talk is devoted to the existence of non-trivial bound states of prescribed mass for the mass-supercritical nonlinear Schrödinger equation on compact metric graphs. The investigation is based upon a general variational principle which combines the monotonicity trick and a min-max theorem with second order information, and upon the blow-up analysis of bound states with prescribed mass and bounded Morse index.

If times permit, we shall also discuss some extensions to non-compact graphs.

This talk is based on joint works with Jack Borthwick (University of Franche-Comté), Xiaojun Chang (Northeast Normal University) and Nicola Soave (Politecnico di Milano).