

Abstract

Oberwolfach Workshop:

Calculus of Variation

Dates:

11 Aug - 16 Aug 2024 (Code: 2433)

Organizers:

Lia Bronsard, Hamilton
Maria Colombo, Lausanne
László Székelyhidi, Leipzig
Yoshihiro Tonegawa, Tokyo

The Calculus of Variations is at the same time a classical subject, with long-standing open questions which have generated exciting discoveries in recent decades, and a modern subject in which new types of questions arise, driven by mathematical developments and emergent applications. It is also a subject with a very wide scope, touching on interrelated areas that include geometric variational problems, optimal transportation, geometric inequalities and domain optimization problems, elliptic regularity, geometric measure theory, harmonic analysis, physics, free boundary problems, etc.

The workshop will balance the traditional interests of past conferences with new emerging perspectives. The topics we will cover during the conference are linked to each other via the methods of Calculus of Variations that are employed, and include (but are not limited to) new developments in classical areas such as the behaviour of non-linear quantities under weak convergence, leading to novel applications; recent progress on the fine structure of free boundaries in obstacle and Bernoulli type problems; recent progress on anisotropic functionals involving nonlocal effects; recent progress in the understanding of defects in micromagnetism and liquid crystals.