# Mathematics Department University of Fribourg

**Vorlesung**
**MA 3225/3226 BSc**
**MA 4225/4226 MSc**

Mittwoch 10–12 Uhr
Hörsaal 2.52
Physikgebäude

**Niveau**

3. Jahr Bachelor
oder Master

**Vorlesung zählt für**

Algebra/Geometrie/
Topologie
oder Analysis

**Vorlesung Akademisches Jahr 2017/2018**

# Einführung in die symplektische Topologie 1. und 2. Teil

## Prof. Dr. A. Dessai

### Inhalt

*Symplectic topology, which arises naturally from the study of classical mechanics, is nowadays an active research area in mathematics. In this course we will give an introduction to symplectic topology and symplectic group actions. The methods introduced in this course are important for many applications in geometry, topology and the study of symmetries. Possible topics of this course include:*

*symplectic linear algebra, affine non-squeezing theorem, smooth manifolds, de Rham cohomology, symplectic manifolds and symplectomorphisms, local properties (Darboux's theorem), almost complex structures, global properties of symplectic manifolds, symplectic group actions, moment maps and quotients, convexity, Delzant polytopes and localization. If time permitted we will also discuss Gromov's proof of the non-squeezing theorem using J-holomorphic curves.*

### Literatur


- *An introduction to symplectic geometry, Rolf Berndt, American Mathematical Society, cop. 2001*
- *Introduction to symplectic topology, Dusa McDuff and Dietmar Salamon, (2nd ed.) Clarendon Press, 1998*
- *Lectures on symplectic geometry, Ana Cannas da Silva, Springer, cop. 2001*
- *Torus actions on symplectic manifolds, Michèle Audin*




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