

Lecture 2

Continuation of Lecture 1. Simple examples of fibre bundles. Mobius band. 1-st Stiefel-Witney class: idea of definition in this case.

Lecture 3

C^∞ -Manifolds in R^n . Local coordinates, Tangent spaces, change of coordinates. Orientation Functions and Maps, C^∞ -approximation.

Lecture 4

Continuation of Lecture 3. Tangent vectors and 1st order diff. operators, Transversality of maps along submanifold. Main properties. Explanations and examples.

Lecture 5

Transversality (continuation). Important cases.

1st applications:

Projection of manifold into hyperplane along some direction. "Generic directions".
Inbeddings and Immersions (in R^{2k+1} and R^{2n}).
Notion of homotopy.