

# **DIFFEOLOGICAL GROUPS**

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Lie groups, groups equipped with a smooth manifold structure, are a broadly-studied and important class of groups with a natural connection to Lie algebras. They arise naturally in representation theory, classical mechanics, and other fields. However, there are plenty of groups that do not admit a smooth manifold structure, but we still wish to treat them as though they did. . .

The concept of diffeological group remedies this by equipping these groups, such as the irrational torus and diffeomorphism groups, with a smooth structure that is not necessarily that of a manifold. We can also easily make the natural connection to Lie algebras of these groups.

This talk will be designed for graduate students, will discuss Lie groups, diffeological groups, their Lie algebras, and have some helpful examples throughout.

Talk will take place in Pearce 226 on

**FRIDAY, 11/02/2018, 11:15AM–12:15PM**

*Hope to see you there!*