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Research field: Lie group, Lie algebra and Representation theory

Key words: Clifford-Klein form, discontinuous group, deformation space, topological blow-up

Present research:

• Deformation spaces of Clifford-Klein forms
  
  A Clifford-Klein form of a homogeneous space $G/H$ of a Lie group $G$, is a manifold of the form $\Gamma \backslash G/H$, where $\Gamma$ is a discontinuous group acting on $G/H$. Given a model space $G/H$, the deformation of $\Gamma$ in $G$ gives rise to a family of Clifford-Klein forms. All manifolds in this family have the same local structure, but have different global structures. My research interests is in such deformation spaces.

• Topological blow-up
  
  It may well happen that deformation spaces of Clifford-Klein forms are not Hausdorff. So, it is not easy to get an intuition of the deformation space. In order to understand such non-Hausdorff spaces, I have introduced a method ‘topological blow-up’. The basic part of this theory has just been established. I plan to apply the method on understanding of some deformation spaces.

Notice for the students:

I hope you have studied and understood well linear algebra, topological space, and manifold.

I hope you know what you are interested in.