

GRADUATE SEMINAR

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Cousin Groups and Levi-Foliations

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3:30 pm

Math and Stat Lounge (CW 307.20)

Abstract: A connected complex Lie group G that has no non-constant holomorphic functions i.e., $\mathcal{O}(G) = \mathbb{C}$, is called a *Cousin Group*. It can be shown that every Cousin group is abelian. Complex tori are such, since they are compact. But there exist non-compact examples. We will in this talk explain in detail 2-dimensional Cousin groups.

Our main result in this talk concerns dense *Levi-foliation* of compact manifolds of the form G_0/Γ where Γ is a discrete subgroup of a connected and simply-connected Lie group G_0 and the latter is a 2 real codimensional Lie subgroup of a connected and simply-connected complex Lie group G .

We will show that G/Γ admits a *tower* with most steps compact and the non-compact ones being abelian orbits consisting of Cousin groups and possibly tori.

This gives a rather explicit description of the structure in the setting.