

**MIT Lie Groups Seminar**  
**Wednesday 4:30–5:30, room 2-142**

**February 20:** Hiroyoshi Tamori (MIT and University of Tokyo), *Classification of minimal representations of simple real Lie groups*.

Let  $G$  be a connected simple real Lie group not of type  $A$ . An irreducible admissible representation of  $G$  is called *minimal* if the annihilator of the underlying  $(\mathfrak{g}, K)$ -module is the Joseph ideal, which is the unique completely prime two-sided ideal whose associated variety is the closure of the minimal nilpotent orbit  $\mathcal{O}_{\min}$ .

In the viewpoint of the Kirillov-Kostant orbit method, unitary minimal representations are supposed to be attached to real orbits in  $\mathcal{O}_{\min}$ . From the 1980s, minimal representations have been constructed in various ways (for example, by Brylinski-Kostant and Torasso), but the full classification has not been known.

In this talk we will prove that there exist no new minimal representations up to infinitesimal equivalence, based on an idea by Gan-Savin that two minimal representations are infinitesimally equivalent if they have a common  $K$ -type. We also obtain an analogous classification for simple Lie groups of type  $A$ .