

**May 11, 2016:** Shilin Yi (UPenn), *Deformation of representations of semisimple Lie groups*. **Followed by dinner.**

Inspired by the observation of Mackey, Higson suggested a mysterious bijection between irreducible representations of a semisimple Lie group  $G$  and that of its Cartan motion group  $G_0$ , which is the normal bundle of a maximal compact subgroup  $K$  inside  $G$ . Recently such bijection has been established by Afgoustidis for tempered representations, while an explanation for this is still missing. I will show that this bijection comes from a natural deformation of each standard Harish-Chandra sheaf over the flag variety to a  $K_{\mathbb{C}}$ -equivariant sheaf on  $(\mathfrak{g}_{\mathbb{C}}/\mathfrak{k}_{\mathbb{C}})^*$ , which is a 'twisted' version of the associated graded construction. Together with Qijun Tan and Yijun Yao, we have computed the case of  $SL(2, \mathbb{R})$ .