March 19, 2014: Hiroshi Oda (Takushoku University), *Functors connecting semisimple Lie groups and graded Hecke algebras*

I want to talk about some topics in §§16–19 of arXiv:1402.3231.

For a real semisimple Lie group $G = NA_K$ and the corresponding graded Hecke algebra $H$, we construct three functors $\Xi_{\text{rad}}$, $\Xi_{\text{min}}$ and $\Xi$ sending an $H$-module to a $(\text{Lie}(G)_C, K)$-module. In the last seminar we introduced a new category $C_{\text{rad}}$ consisting of those pairs of a $(\text{Lie}(G)_C, K)$-module and an $H$-module satisfying some axioms. For any $H$-module $\mathcal{X}$, the three pairs $(\Xi_{\text{rad}}(\mathcal{X}), \mathcal{X})$, $(\Xi_{\text{min}}(\mathcal{X}), \mathcal{X})$ and $(\Xi(\mathcal{X}), \mathcal{X})$ belong to $C_{\text{rad}}$ and have their own universal properties in $C_{\text{rad}}$. I also want to discuss a relation between our functors and the functors defined by Ciubotaru and Trapa in *Adv. Math.* 227 (2011).