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