October 21, 2015: Salah Mehdi (University of Metz), “Representation-theoretic embeddings of differential operators.”

Let $G/H$ be a pseudo-Riemannian symmetric space and $L$ a closed subgroup of $G$ acting transitively on $G/H$. There is an embedding of the algebra $D(G/H)$ of $G$-invariant differential operators on $G/H$ into the algebra $D(L/L \cap H)$ of $L$-invariant differential operators on $L/L \cap H$. We will describe some explicit connections between $G$-representations and $L$-representations, analogous to branching rules. We will extend the above embedding to sections of bundles, and, in particular, we compute the image of cubic and non-cubic Dirac operators. The hope, still unachieved, is to derive finer information on representations.