Title: Equidistribution of generalized Farey points and applications to counting

Abstract: Given a finite dimensional representation $\pi: G = \text{SL}(d, \mathbb{R}) \to \text{GL}(V)$ we define generalized Farey sets of a lattice $\Gamma$ in $G$ and prove that each Farey set equidistributes on a submanifold in $\Gamma'\backslash G$ depending on commensurability of $\Gamma$ and $\Gamma'$. The case $V = \mathbb{R}^d$, $\pi$ the usual representation, and $\Gamma = \Gamma' = \text{SL}(d, \mathbb{Z})$ corresponds to the standard Farey points in $\mathbb{Q}^{d-1}$. We apply the equidistribution result to refine the theorem of Schmidt on counting the number of equivalence classes of lattices of $\mathbb{Z}^d$. Joint work with Jens Marklof.