October 2, 2013: Laura Rider (MIT), *Parity sheaves on the affine Grassmannian and the Mirković-Vilonen conjecture*

Let G be a connected complex reductive group, and let Gr denote its affine Grassmannian. The topology of Gr encodes the representation theory of the split Langlands dual group $G^\vee$ over any field k via the geometric Satake equivalence due to Mirković-Vilonen. This result raises the possibility of using the universal coefficient theorem of topology to compare representations over different fields. With that in mind, Mirković and Vilonen conjectured that the local intersection cohomology of the affine Grassmannian with integer coefficients is torsion-free. I will discuss the proof of (a slight modification of) the Mirković-Vilonen conjecture. This is joint work with Pramod Achar.