

Mathematics Department Colloquium

Organizer(s): Kenneth Ribet

Thursday, 4:10–5:00pm, 60 Evans

Mar. 20 **Joel Kamnitzer**, UC Berkeley and American Institute of Mathematics

Knot homology, geometric representation theory, and derived categories

In recent years, knot homology theories invented by Khovanov (and others) have attracted a great deal of attention within the field of low-dimensional topology. In my talk, I will explain a construction of these knot homology theories using the framework of geometric representation theory. More specifically, we will consider derived categories of coherent sheaves on subvarieties of affine Grassmannians in an attempt to give a uniform and natural construction of these theories.