BOSTON UNIVERSITY GEOMETRY AND PHYSICS SEMINAR

LOCALIZATION RESULTS FOR RELAXED HIGHEST WEIGHT REPRESENTATIONS OVER AFFINE KAC-MOODY ALGEBRAS ON THE KASHIWARA FLAG SCHEME.

Claude Eicher
MIT

December 6, 2017, 4:00 – 5:00pm
Math/Computer Science, Room 148
111 Cummington Street, Boston

Tea: 3:45pm in Room 144

Abstract: The relaxed highest weight representations introduced by Feigin, Semikhatov, and Tipunin are a a class of representations of the Lie algebra affine $\mathfrak{sl}_2$, which do not have a highest (or lowest) weight. We generalize this notion to an arbitrary affine Kac-Moody algebra $\mathfrak{g}$ and realize induced $\mathfrak{g}$-modules of this type and their duals as global sections of twisted D-modules on the Kashiwara flag scheme associated to $\mathfrak{g}$. The D-modules that appear in our construction are direct images from subschemes given by the intersection of finite dimensional Schubert cells with their translate by a simple reflection. Besides the twist, they depend on a complex number describing the monodromy of the local systems we construct on these intersections. These results describe for the first time explicit non-highest weight g-modules as global sections on the Kashiwara flag scheme and extend results of Kashiwara-Tanisaki to the case of relaxed highest weight representations. This is based on arxiv:1607.06342 [math.RT].

See `http://math.bu.edu/research/geom/seminar.html` or contact Yoosik Kim (*yoosik@bu.edu*) or Siu-Cheong Lau (*lau@math.bu.edu*) for more information.