

October 5 and 12: Fokko du Cloux (Lyon), “Computational representation theory for real reductive Lie groups.” FOLLOWED BY DINNER on October 12.

As part of the Atlas of Reductive Lie Groups project, I am working on a software package that from the input of the root datum corresponding to an arbitrary connected complex reductive group G , will attempt to output the representation theories of all the various real forms of G —one of the ultimate goals would be to output the unitary duals of the real forms, but this is still a long way off. I will present the main ideas underlying the current (and very preliminary) version of the program, which focuses on the structure theory of real reductive groups (classification of real forms, conjugacy classes of Cartan subgroups, computation of component groups...), and on the parametrization of blocks of representations, leading up to the implementation of the Kazhdan-Lusztig-Vogan algorithm.