- Réamonn Ó Buachalla (Prague) - Quantum flag manifolds and noncommutative geometric representations

Abstract: We present recent progress on noncommutative geometric representations of quantum algebraic objects, such as finite-dimensional Drinfeld-Jimbo modules, Nichols algebras, and quantum homogeneous coordinate rings of quantum flag manifolds. The noncommutative geometry underlying these realisations is a q-deformed Dolbeault complex for the A-series quantum flag manifolds. This complex is built in a very natural way from Lusztig's quantum root vectors, and is shown to be quite sensitive to the required choice of reduced decomposition of the longest element of the Weyl group. When these constructions are restricted to the quantum Grassmannians, they coincide with earlier research on the celebrated Heckenberger-Kolb differential calculus.