Anthony Joseph (Weizmann Institute)
Title: The Borcherds Character Formula, the Littelmann Path Model and n homology.
Abstract: In 1988, Borcherds observed that one may introduce imaginary simple roots into the Kac-Moody framework and still obtain a precise character formula for the characters of unitarizable highest weight modules as long as the Cartan matrix was symmetrizable. Under this assumption, Jeong, Kang, Kashiwara and Shin recently constructed crystal bases for these modules. In joint work with P. Lamprou, a Littelmann path model for these crystals is constructed. It does not need the Cartan matrix to be symmetrizable. The main results are a Borcherds type character formula and an isomorphism.theorem. The latter can be used to show that the crystals are isomorphic to those mentioned above in the symmetrizable case. Finally the combinatorics is compared to that arising in the computation of the n homology of these modules.