Shar polytopes.

Vincent Pilaud

For any lattice congruence of the weak order on permutations, N. Reading proved that glueing together the cones of the braid fan that belong to the same congruence class defines a complete fan, called quotient fan, and F. Santos and I showed that it is the normal fan of a polytope, called quotientope. In this talk, I will present an alternative simpler approach to realize this quotient fan based on Minkowski sums of elementary polytopes, called shard polytopes, which have remarkable combinatorial and geometric properties. In contrast to the original construction of quotientopes, this Minkowski sum approach extends to type B. Joint work with Arnau Padrol and Julian Ritter.