

Combinatorics and Geometry of v -Tamari lattices

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In this talk I will present some recent developments on geometric and combinatorial aspects of v -Tamari lattices. On the geometric side, we answer a question of F. Bergeron regarding their realizability in terms of polytopal subdivisions of associahedra in the Fuss-Catalan case, present some connections with tropical geometry, and a potential extension to Coxeter groups of type B . On the combinatorial side, we show that they can be obtained as the duals of well chosen subword complexes, and provide a simple proof of the lattice property using certain bracket vectors of v -trees. Our approach also gives conjectural insight on the geometry of more general objects in terms of polytopal subdivisions of multiassociahedra.

This talk is based on joint work with Arnau Padrol and Camilo Sarmiento.