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Alcoved signed permutations

We introduce a new partial order on signed permutations whose cover relations are determined by certain *big ascents*. Its Hasse diagram is dual to the alcove triangulation of the fundamental parallelepiped of the type C root system, as studied by Lam and Postnikov. This duality allows us to use Ehrhart theory to obtain a generating function for big ascents and, conversely, to combinatorially interpret the coefficients of h^*-polynomial of the type C half-open hypersimplices. We also obtain a relation between the distribution of covers in our poset and the usual descents in the "half" weak order of type BC. Moreover, we show that these family of posets converges, in a precise sense, to the lattice of strict partitions. This is based on joint work with Antoine Abram.