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Cristian Lenart* (1enart@albany.edu), Department of Mathematics and Statistics, State University of New York at Albany, 1400 Washington Avenue, Albany, NY 12222. *On the combinatorics of crystal graphs.*

In joint work with A. Postnikov, we defined a simple combinatorial model for the irreducible representations of complex semisimple Lie algebras, which will be referred to as the alcove path model. This model was also extended to complex symmetrizable Kac-Moody algebras. It can be viewed as a discrete counterpart to the Littelmann path model. While the main features of Littelmann's model were recovered in the alcove path model, the latter has some additional features too, developed in further solo work. The talk will focus on one of the mentioned additional features in the finite case, namely a combinatorial realization of Lusztig's involution on irreducible crystals. This involution exhibits a crystal as a self-dual poset, and corresponds to the action of the longest Weyl group element on the corresponding representation. (Received September 08, 2006)