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Harrisonburg, VA 22807, and **Anne Schilling**. *Affine structures for certain  $E_6$  crystals*.

Let  $\mathfrak{g}$  be an affine Kac–Moody algebra and  $U'_q(\mathfrak{g})$  be the associated quantized affine algebra. Kirillov–Reshetikhin modules are finite dimensional  $U'_q(\mathfrak{g})$ -modules labeled by a node  $r$  of the Dynkin diagram together with a nonnegative integer  $s$ . It is expected that each Kirillov–Reshetikhin module has a crystal basis. In this talk, we focus on type  $E_6^{(1)}$  for which Chari has given the decomposition of Kirillov–Reshetikhin modules into classical highest-weight modules. We extend the classical crystals for these modules to give an explicit combinatorial realization of the Kirillov–Reshetikhin crystals when  $r$  is 1, 6 or 2 in the Bourbaki labeling and  $s$  is arbitrary. This realization is based on the technique of promotion that has been used for other types by Shimozono and Fourier, Okado, Schilling.

This is joint work with Anne Schilling. (Received September 21, 2010)