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**Henry Kvinge\*** (hkvinge@math.ucdavis.edu) and **Monica Vazirani**. *The influence of the Kirillov-Reshetikhin crystal  $B^{1,1}$  on the structure of simple cyclotomic KLR modules.*

Khovanov-Lauda-Rouquier (KLR) algebras were invented to categorify the negative half of the quantum Kac-Moody algebra associated to a symmetrizable Cartan data. It was later shown by Lauda-Vazirani that the simple modules of the cyclotomic KLR algebra,  $R^\Lambda$ , carry the structure of the highest weight crystal  $B(\Lambda)$ . It follows from this that any properties of  $B(\Lambda)$  should be the shadow of some module-theoretic property of simple  $R^\Lambda$ -modules.

In classical affine type, highest weight crystals (which are infinite) have the remarkable property that they can be constructed from the tensor product of the much more tractable perfect crystals (which are finite). In this talk I will describe the algebraic analogue of this phenomenon in terms of simple  $R^\Lambda$ -modules in the case where the perfect crystal is the Kirillov-Reshetikhin crystal  $B^{1,1}$  and  $\Lambda$  is the fundamental weight  $\Lambda_i$ .

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