Algebra/Topology Seminar

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An Efficient Algorithm for the Energy Function of KR-Crystals in Lie Type B

Thursday, September 12, 2013
1:15 p.m. in ES-143

ABSTRACT. Crystals are colored directed graphs encoding information about Lie algebra representations. Certain crystals for affine Lie algebras, called Kirillov-Reshetikhin (KR) crystals, are graded by the energy function, which is defined recursively. It is desirable to calculate the energy of a vertex using only data associated with that vertex. In recent work, C. Lenart, S. Naito, D. Sagaki, A. Schilling, and M. Shimozono gave such a formula, which is uniform across Lie types, based on the so-called quantum alcove model. In types A and C, this formula translates into a more efficient one, in terms of so-called Kashiwara-Nakashima columns. In this talk I will discuss partial results concerning the extension of this approach to type B.