1039-05-167 **Jason Bandlow*** (jbandlow@math.ucdavis.edu), Department of Mathematics, University of California-Davis, One Shields Avenue, Davis, CA 95616. *Type $A_n^{(1)}$ crystals and promotion operators.* Preliminary report.

The Dynkin diagram for the affine Lie algebra (g) of type $A_n^{(1)}$ comes with an automorphism ω which sends the node labeled i to the node labeled $i+1 \bmod n+1$. A crystal basis for an irreducible finite-dimensional $U_q((g))$ module is "compatible with promotion" if there exists a map pr on the nodes of the crystal graph, of order $n+1$, and with the induced map on edges given by ω. A consequence of this definition is that crystal base which are compatible with promotion are completely determined by pr and the underlying classical (type A_n) structure. We will show that, in certain cases, a given classical structure implies the existence of unique affine Kashiwara operators or exactly one promotion operator, and discuss the implications of this fact. This work is joint with Anne Schilling and Nicolas Thiéry. (Received March 11, 2008)