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**Cristian Lenart\*** ([1enart@albany.edu](mailto:1enart@albany.edu)), Department of Mathematics, State University of New York at Albany, 1400 Washington Avenue, Albany, NY 12222. *From Macdonald polynomials to a charge statistic in classical Lie types*. Preliminary report.

The charge is an intricate statistic on words, due to Lascoux and Schützenberger, which gives positive combinatorial formulas for Lusztig's  $q$ -analogue of weight multiplicities and the energy function on affine crystals, both of type  $A$ . As these concepts are defined for other Lie types, it has been a long-standing problem to express them based on a generalization of charge. I present a method to address this problem in classical Lie types, based on the recent Ram-Yip formula for Macdonald polynomials and the quantum Bruhat order on the corresponding Weyl group. (Received June 24, 2010)