1011-05-140   **Paul M Terwilliger*** (`terwilli@math.wisc.edu`), Department of Mathematics, University of Wisconsin, 480 Lincoln Drive, Madison, WI 53706. *Distance-regular graphs and the quantum affine algebra $U_q(\widehat{sl}_2)$*. Preliminary report.

Let Γ denote a distance-regular graph that is formally self dual and has classical parameters. For example, Γ is the distance-regular graph associated with the bilinear forms, the alternating forms, the Hermitean forms, or the quadratic forms. We display a natural action of the quantum affine algebra $U_q(\widehat{sl}_2)$ on the standard module of Γ. Our result shows that for Γ the subconstituent algebra is a homomorphic image of $U_q(\widehat{sl}_2)$. This is joint work with Tatsuro Ito. (Received August 23, 2005)