1003-17-1131   **Kailash C. Misra*** (`misra@math.ncsu.edu`), Department of Mathematics, North carolina State University, Raleigh, NC 27695-8205. *Perfect Crystal for $U_q(D_4^{(3)})$*. Preliminary report.

The crystal base for the integrable representations of quantum affine algebras have proved to be very important to study its combinatorial properties. The path realization of the crystal base for a quantum affine algebra is given in terms of certain level zero crystals called perfect crystals. Perfect crystals are already known for all classical quantum affine algebras and $U_q(G_2^{(1)})$. In this talk we will discuss a perfect crystal of level $l > 0$ for the quantum affine algebra $U_q(D_4^{(3)})$ recently obtained jointly with Okado and Yamada. Consequently we will obtain the path realizations of integrable highest weight representations of $U_q(D_4^{(3)})$. (Received October 04, 2004)