1003-17-1131  **Kailash C. Misra***(misra@math.ncsu.edu), Department of Mathematics, North Carolina State University, Raleigh, NC 27695-8205. *Perfect Crystal for $U_q(D^{(3)}_4)$. 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 $U_q(G^{(1)}_2)$. In this talk we will discuss a perfect crystal of level $l > 0$ for the quantum affine algebra $U_q(D^{(3)}_4)$ recently obtained jointly with Okado and Yamada. Consequently we will obtain the path realizations of integrable highest weight representations of $U_q(D^{(3)}_4)$. (Received October 04, 2004)