Kailash C. Misra* (misra@ncsu.edu), Raleigh, NC 27695-8205. Crystal like bases for some quantized imaginary Verma modules for $U_q(\widehat{sl}(2))$.

For the affine Lie algebra $\widehat{sl}(2)$ there exists a closed partition of the root system which is not Weyl group conjugate to the standard partition of the root system. This nonstandard partition of the root system gives rise to a nonstandard Borel subalgebra. The Verma module $M(\lambda)$ with highest weight $\lambda$ induced by the nonstandard Borel subalgebra is called the imaginary Verma module. This imaginary Verma module $M(\lambda)$ can be $q$-deformed to the quantized imaginary Verma module $M_q(\lambda)$. We define imaginary crystal bases for $U_q(\widehat{sl}(2))$-modules in certain category $\mathcal{O}_{\text{red,im}}^q$ and show the existence of such bases for reduced quantized imaginary Verma modules for $U_q(\widehat{sl}(2))$. Then we show the existence of imaginary crystal basis for any object in the category $\mathcal{O}_{\text{red,im}}^q$.

This talk is based on some recent work jointly with Ben Cox and Vyacheslav Futorny. (Received July 12, 2018)