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Rebecca L. Jayne* (rjayne@hsc.edu), Box 187, Hampden-Sydney, VA 23901. *Multiplicities of maximal dominant weights of integrable $\widehat{sl}(n)$ -modules.*

For $n, k \geq 2$, we study the multiplicities of certain maximal dominant weights of the irreducible highest weight $\widehat{sl}(n)$ -module $V(k\Lambda_0)$. We give the multiplicity of the weight $k\Lambda_0 - \sum_{i=0}^{\ell} (\ell - i)(\alpha_i + \alpha_{n-i})$ by the number of certain admissible sequences of $k - 1$ lattice paths in a colored $\ell \times \ell$ square. In turn, we find that the number of such admissible sequences of lattice paths is given by the sum of squares of the number of standard Young tableaux of shape $\lambda \vdash \ell$ with $l(\lambda) \leq k$, a value that can be calculated using the well known Frame-Robinson-Thrall hook length formula. This is a joint work with Kailash C. Misra. (Received September 08, 2016)