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Cristian Lenart* (1enart@albany.edu), Department of Mathematics, State University of New York at Albany, 1400 Washington Avenue, Albany, NY 12222. *Growth diagrams for the Schubert multiplication.*

We present a partial generalization to Schubert calculus on flag varieties of the classical Littlewood-Richardson rule, in its version based on Schützenberger’s jeu de taquin. More precisely, we describe certain structure constants expressing the product of a Schubert and a Schur polynomial. We use a generalization of Fomin’s growth diagrams (for chains in Young’s lattice of partitions) to chains of permutations in the so-called k -Bruhat order. Our work is based on the recent thesis of Beligan, in which he generalizes the classical plactic structure on words to chains in certain intervals in k -Bruhat order. Potential applications of our work include the generalization of the S_3 -symmetric Littlewood-Richardson rule due to Thomas and Yong, which is based on Fomin’s growth diagrams. (Received January 26, 2009)