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Alexander Yong*, 1409 W. Green Street, Urbana, IL 61801, and **Li Li** (llpku@uiuc.edu), 1409 W. Green Street, Urbana, IL 61801. *Some Gröbner degenerations of Kazhdan-Lusztig ideals and multiplicities of Schubert varieties.*

We study Hilbert-Samuel multiplicity for points of Schubert varieties in the complete flag variety, by Gröbner degenerations of the Kazhdan-Lusztig ideal. In the covexillary case, we give a positive combinatorial rule for multiplicity by establishing (with a Gröbner basis) a reduced and equidimensional limit whose Stanley-Reisner simplicial complex is homeomorphic to a shellable ball or sphere. We show that multiplicity counts the number of facets of this complex. In particular, our result gives a multiplicity rule for Grassmannian Schubert varieties, providing alternative statements and proofs to formulae of [Lakshmibai-Weyman '90], [Rosenthal-Zelevinsky '01], [Krattenthaler '01], [Kreiman-Lakshmibai '04], [Woo-Yong '09] and others. We suggest extensions of our methodology to the general case. (Received January 10, 2010)