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Laura Escobar and **Oliver Pechenik***, Department of Mathematics, Rutgers University, 110 Frelinghuysen Rd., Piscataway, NJ 08854, and **Bridget Eileen Tenner** and **Alexander Yong**.
Rhombic tilings and Bott-Samelson varieties.

S. Elnitsky (1997) gave an elegant bijection between rhombic tilings of $2n$ -gons and commutation classes of reduced words in the symmetric group on n letters. P. Magyar (1998) found an important construction of the Bott-Samelson varieties introduced by H.C. Hansen (1973) and M. Demazure (1974). We explain a natural connection between S. Elnitsky's and P. Magyar's results. This suggests using tilings to encapsulate Bott-Samelson data and indicates a geometric perspective on S. Elnitsky's combinatorics. We also extend this construction by assigning desingularizations to the zonotopal tilings considered by B. Tenner (2006). (Received July 14, 2016)