

# ON THE SMOOTHNESS OF GENERIC TORUS ORBIT CLOSURES IN SCHUBERT VARIETIES

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The standard action of a complex torus  $(\mathbb{C}^*)^n$  on the complex vector space  $\mathbb{C}^n$  induces an action of  $(\mathbb{C}^*)^n$  on the full flag variety  $\mathcal{F}\ell(\mathbb{C}^n)$ . It has been studied that the closure of a generic torus orbit in the full flag variety is a smooth projective toric variety whose fan is associated to the Weyl chamber. In this talk, we define a generic torus orbit in the Schubert variety  $X_w$  and its closure  $Y_w$  for a permutation  $w \in \mathfrak{S}_n$ . Moreover we associate a graph  $\Gamma_w(u)$  to each  $u \leq w$ , and prove that  $Y_w$  is smooth at the fixed point  $uB$  if and only if the graph  $\Gamma_w(u)$  is acyclic. This is joint work with Mikiya Masuda.

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