

1155-05-128

**Zachary Hamaker, Oliver Pechenik, David E Speyer and Anna Weigandt\***  
(weigandt@umich.edu). *Derivatives of Schubert polynomials and proof of a determinant conjecture of Stanley.*

We describe the action of a differential operator when applied to the Schubert basis. We use this to give a short proof of the Macdonald identity. We also discuss an application to the study of the (strong) Sperner property of the weak order on the symmetric group. This property was recently proven by Gaetz and Gao (2018). Our description of the differential operator leads to a proof of a determinant conjecture of Stanley (2017), which also implies the Sperner property. (Received January 07, 2020)