

# Classification of the T-avoiding permutations

2011 Hudson River Undergraduate Mathematics Conference  
Skidmore College, April 16, 2011

Joseph Cormier, Plymouth State University  
Dana C. Ernst, Plymouth State University  
Zachariah Goldenberg, Plymouth State University  
Jessica Kelly, Plymouth State University  
Christopher Malbon, Plymouth State University

**Abstract:** We say that a permutation  $w$  has property T if there exists  $i$  such that either  $w(i) > w(i+1), w(i+2)$  or  $w(i+2) < w(i), w(i+1)$ . A permutation  $w$  is T-avoiding if neither  $w$  or  $w^{-1}$  have property T. In this talk, we will classify the T-avoiding permutations, as well as discuss possible generalizations to other Coxeter groups. Our result is a reformulation of previous results, but with a simpler proof.

This research is directed by Dr. Dana C. Ernst of Plymouth State University.