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**William T Trotter\*** ([trotter@math.gatech.edu](mailto:trotter@math.gatech.edu)), School of Mathematics, Georgia Institute of Technology, Atlanta, GA 30332, and **David M Howard**. *On the Size of Maximal Antichains and the Number of Pairwise Disjoint Maximal Chains*. Preliminary report.

Fix integers  $n$  and  $k$  with  $n \geq k \geq 3$ . Duffus and Sands proved that if  $P$  is a finite poset and  $n \leq |C| \leq n + (n - k)/(k - 2)$  for every maximal chain in  $P$ , then  $P$  must contain  $k$  pairwise disjoint maximal antichains. They also constructed a family of examples to show that these inequalities are tight. These examples are 2-dimensional which suggests that the dual statement may also hold. In this paper, we show that this is correct. Specifically, we show that if  $P$  is a finite poset and  $n \leq |A| \leq n + (n - k)/(k - 2)$  for every maximal antichain in  $P$ , then  $P$  has  $k$  pairwise disjoint maximal chains. Our argument actually proves a somewhat stronger result, and we are able to show that an analogous result holds for antichains. (Received January 28, 2010)