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Byungchan Kim* (bkim4@illinois.edu), 1409 W. Green St, Urbana, IL 61801, and **Jeremy Rouse** (jarouse@math.uiuc.edu), 1409 W. Green St., Urbana, IL 61801. *D. Stanton's conjecture on t -core partitions.*

Let t be a positive integer. The generating function for the number of t -core partitions of n is

$$\sum_{n=0}^{\infty} a_t(n)q^n = \prod_{n=1}^{\infty} \frac{(1 - q^{tn})^t}{1 - q^n}.$$

Stanton conjectured that for all $t \geq 4$,

$$a_{t+1}(n) \geq a_t(n),$$

for all $n \geq t + 1$. In this talk, by using an explicit upper bound for the number of t -core partitions, we show Stanton's conjecture is true for small t 's. (Received September 21, 2009)