1103-05-130 **Nataša Jonoska*** (jonoska@mail.usf.edu), **Florin Manea** (flmanea@gmail.com) and **Shinnosuke Seki** (shinsek@gmail.com). *Counting Squares in Binary Words.*

If u is a word, then uu is said to be a square of u. It has been conjectured by Fraenkel and Simpson in 1998 that a word of length n cannot have more than n distinct squares as subwords. We suggest a stronger conjecture for the number of distinct squares in a word over alphabet $\{a, b\}$. Let k be the least of the number of a's and the number of b's in the word. In this case, we propose that the number of distinct squares in a word of length n is bounded by $\frac{2k-1}{2k+2}n$. We observe that this new bound holds for several classes of binary words and we provide examples of words that achieve the proposed bound, thereby proving that the bound is tight. (Received August 17, 2014)