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**James J. Madden\*** ([madden@math.lsu.edu](mailto:madden@math.lsu.edu)), 222 Prescott Hall, Louisiana State Univ., Baton Rouge, LA 70803. *On the Distribution of Maximal Runs in Binary Words*. Preliminary report.

Let  $R$  be a finite set of positive integers and let  $K$  be a function from  $R$  to the natural numbers. Let  $W(n, R, K)$  denote the set of binary words of length  $n$  that, for all  $r \in R$ , contain exactly  $K(r)$  maximal subwords of  $r$  identical consecutive symbols. We exhibit the generating function for the cardinality of  $W(n, R, K)$ . We also express, by means of generating functions, the probability that a binary word of length  $n$  produced by a Markov process (with specified parameters) belongs to  $W(n, R, K)$ . All these results generalize a famous result of DeMoivre, *Doctrine of Chances*, Second Edition, Problem LXXXVIII: “To find the Probability of throwing a Chance assigned a given number of times without intermission, in any given number of Trials.” (Received September 26, 2017)