

## A REMARK ABOUT HOMOGENEOUS EXPERIMENTS

PETER H. STARKE<sup>(A)</sup>

*Humboldt-Universität zu Berlin, Institut für Informatik  
Unter den Linden 6, 10099 Berlin, Germany  
starke@informatik.hu-berlin.de*

### ABSTRACT

It is shown, that the statement (11) is true for  $H(n)$ , i. e., for the maximal length of the shortest homogeneous experiments on automata with  $n$  states.

*Keywords:* homogeneous experiments, automata

### Preface to the Translation<sup>1</sup>

The paper originally appeared in German ([1]). In order to keep the translation as close as possible to the original paper, we explain here some notation which is used but not explained in the paper and therefore neither in the translation. We hope that this makes it easier to follow the paper, especially for those readers, who are not familiar with the conventions and style of half a century ago. The notation was introduced in [2]. The literature to which we refer here is listed immediately after this preface whereas the references of the paper itself are given at the end of the paper. At the time that the original paper [1] was published, the earlier submitted paper [2] had not yet appeared. Nevertheless, we give here (at the end of the preface and at the end of the translation) the reference to the later publication.

Let  $M$  be a set. The cardinality of the set  $M$  is denoted by  $\text{Anz}(M)$ ; it comes from the German word *Anzahl* for *Cardinality*. A sequence  $m_1 m_2 \dots m_n$  for a natural number  $n$  and elements  $m_i \in M$  with  $1 \leq i \leq n$  is called a word with length  $n$  over the set  $M$ . If  $n = 0$ , then the sequence is the empty word  $e$ . The length of a word  $w$  is denoted by  $\ell(w)$ . The set of all words over the set  $M$  is denoted by  $W(M)$ . The set of all subsets of the set  $M$  (the power set of  $M$ ) is denoted by  $\mathfrak{P}(M)$ .

An automaton without output is a triple  $\mathfrak{A} = [X, Z, f]$  where  $X$  denotes a non-empty set of input symbols (signals),  $Z$  denotes a non-empty set of states, and  $f$  denotes a transition function  $f : Z \times X \rightarrow Z$ . An automaton is called initial if there

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<sup>1</sup>This section is not part of the original paper.