

1125-11-2395

**DoYong Kwon\*** (doyong@jnu.ac.kr), Department of Mathematics, Chonnam National University, Gwangju, 500-757, South Korea. *Sturmian words and Cantor sets arising from unique expansions over ternary alphabets.*

Over a finite alphabet  $A$  of real numbers, unique expansions in base  $\beta$  are considered. A real number  $G_A$  called the generalized golden ratio is a border of situation of unique expansions. If  $\beta < G_A$  then there are only trivial unique expansions in base  $\beta$ , while we have non-trivial unique expansions in base  $\beta$  whenever  $\beta > G_A$ . Komornik, Lai, and Pedicini (2011) investigated the case where  $A$  consists of three real numbers, and demonstrated that Sturmian words curiously emerge out of the generalized golden ratio. The present talk focuses on Sturmian words under this context. For a given alphabet  $A = \{a_1, a_2, a_3\}$  with  $a_1 < a_2 < a_3$ , we give a complete characterization of the corresponding Sturmian words effectively and algorithmically, which reveals interesting structures behind the generalized golden ratios. (Received September 20, 2016)