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Shigeki Akiyama* (akiyama@math.sc.niigata-u.ac.jp), Department of Mathematics, Faculty of Science, Niigata University, Ikarashi-2, 8050, Niigata, 950-2181, Japan. *Recursive renewability and primitive substitutiveness of rotation words.*

Sturmian word is a coding of 1-dim irrational rotation. It is well known that successive 2-blocking procedure of sturmian words leads us to reproduce the algorithm of continued fraction of the angle of the rotation. Recursive renewable words are the words having this successive blocking structure. We shall show that generalized rotation words produced by any decomposition of unit interval, have this recursive renewability. Then we characterize primitive substitutive rotation words as generalized rotation words with a quadratic angle and all of their discontinuity belong to the quadratic field generated by the angle. This result gives an understanding of all known results on the characterization of sturmian words coming from fixed points of substitutions. (Received January 07, 2007)