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On the Diophantine nature of the elements of Cantor sets arising in the dynamics of contracted rotations

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Abstract. We prove that these Cantor sets are made up of transcendental numbers, up to their endpoints 0 and 1, under some arithmetical assumptions on the data. To that purpose, we establish a criterion of linear independence over the field of algebraic numbers for the three numbers $1, \xi_1, \xi_2$, where ξ_1 and ξ_2 are two arbitrary Sturmian numbers with the same slope.

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