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θ -Twisted Involution Graphs of S_n with non-standard generating sets. Preliminary report.

Twisted involutions are important in the study of reductive symmetric spaces and symmetric k -varieties. In many cases, the twisted involutions of an algebraic group classify particular orbits of that group. It is possible to determine the θ -twisted involutions algorithmically. This algorithm depends on a particular generating set. This algorithm has been proved to generate all twisted involutions for a group given the standard generating set. In this work, we focus particularly on S_n and show that any generating set of S_n can be used to generate all twisted involutions. (Received September 24, 2018)