

DICHOTOMIES FOR CERTAIN PRODUCT MEASURES AND STABLE
PROCESSES

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Abstract: Necessary and sufficient conditions for equivalence or singularity of certain product measures are given and applied to the problem of distinguishing a sequence of random vectors from affine transformations of itself. In particular, sequences of independent stable random variables are considered and the singularity of sequences with different indexes of stability is proved. By using these results the dichotomy, "two processes are either equivalent or singular", is established for certain classes of stable processes, such as independently scattered measures and harmonizable processes. Also sufficient conditions for singularity and necessary conditions for absolute continuity are given for p^{th} order processes.

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