POSITIVE-DEFINITE MATRIX PROCESSES OF FINITE VARIATION

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Abstract: Processes of finite variation, which take values in the positive semidefinite matrices and are representable as the sum of an integral with respect to time and one with respect to an extended Poisson random measure, are considered. For such processes we derive conditions for the square root (and the r-th power with $0 < r < 1$) to be of finite variation and obtain integral representations of the square root. Our discussion is based on a variant of the Itô formula for finite variation processes.

Moreover, Ornstein-Uhlenheck type processes taking values in the positive semidefinite matrices are introduced and their probabilistic properties are studied.

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