WEIGHTED SQUARE SUMMABLE AND GENERALIZED HARMONIZABLE SEQUENCES

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Abstract: It is shown that a weighted square summable process (sequence) with weights related to a Stieltjes moment sequence is generalized harmonizable (i.e., it is represented by a Borel vector-valued measure on the complex plane). An explicit formula for a normal dilation of such a process is presented. An example of a generalized harmonizable process which does not admit any representing measure on a compact set is given. It is proved that a process which is generalized harmonizable on a compact set always has a representing measure supported on at most two circles centered at the origin. The question of the existence and summability of densities of representing measures of such a process is investigated.

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