

Zeitschrift: L'Enseignement Mathématique
Herausgeber: Commission Internationale de l'Enseignement Mathématique
Band: 28 (1982)
Heft: 1-2: L'ENSEIGNEMENT MATHÉMATIQUE

Artikel: HARMONIZABLE PROCESSES: STRUCTURE THEORY
Autor: Rao, M. M.
Kurzfassung: Contents
DOI: <https://doi.org/10.5169/seals-52243>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. [Siehe Rechtliche Hinweise.](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. [Voir Informations légales.](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. [See Legal notice.](#)

Download PDF: 02.04.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

HARMONIZABLE PROCESSES: STRUCTURE THEORY ¹

by M. M. RAO

Dedicated to the memory of Prof. S. Bochner

CONTENTS

	<i>Page</i>
1. Introduction	295
2. Harmonizability	300
3. Integral representation of a class of second order processes . .	305
4. V -boundedness, weak and strong harmonizability	314
5. Domination problem for harmonizable fields	322
6. Stationary dilations	326
7. Characterizations of weak harmonizability	332
8. Associated spectra and consequences	337
9. Multivariate extension and related problems	343
References	350

1. INTRODUCTION

If \mathcal{H} is a complex Hilbert space and $X : \mathbf{R} \rightarrow \mathcal{H}$ is a mapping, then the curve $\{X(t), t \in \mathbf{R}\}$ is often called a *second order* (or Hilbertian) stochastic process, and if \mathbf{R} is replaced by \mathbf{R}^n , $n \geq 2$, it is called a (Hilbertian) *random field*. Following Khintchine who developed the initial theory (1934), the process (or field) is called *weakly stationary* if $r : (s, t) \mapsto (X(s), X(t))$, termed the *covariance function* ¹ of the

¹ Work supported in part under the ONR Contract No. N00014-79-C-0754 (Modification No. P00001). The material is presented in two talks—at the annual So. Calif. Probability Conference on December 22, 1980, and the SCFAS meeting at Northridge, CA on May 16, 1981.

AMS (1979) *subject classification*: Primary—60G12, 60G35, 60G60; Secondary—62M15.

Key words and Phrases: Weakly and strongly harmonizable process, V -boundedness, stationary dilations, DS- and MT-integrals, bimeasures, filtering, classes (KF) and (C), multidimensional processes, p -absolutely summing operators, associated spectra of processes.