David González—Sánchez Onésimo Hernández—Lerma

Discrete-Time Stochastic Control and Dynamic **Potential Games** The Euler-Equation Approach



David González—Sánchez Onésimo Hernández—Lerma

Discrete-Time Stochastic Control and Dynamic Potential Games The Euler— **Equation Approach**



SpringerBriefs in Mathematics

Series Editors

Krishnaswami Alladi Nicola Bellomo Michele Benzi Tatsien Li Matthias Neufang Otmar Scherzer Dierk Schleicher Benjamin Steinberg Vladas Sidoravicius Yuri Tschinkel Loring W. Tu G. George Yin Ping Zhang

SpringerBriefs in Mathematics showcases expositions in all areas of mathematics and applied mathematics. Manuscripts presenting new results or a single new result in a classical field, new field, or an emerging topic, applications, or bridges between new results and already published works, are encouraged. The series is intended for mathematicians and applied mathematicians.

For further volumes:

http://www.springer.com/series/10030

David González-Sánchez Onésimo Hernández-Lerma

Discrete-Time Stochastic Control and Dynamic Potential Games

The Euler-Equation Approach



David González-Sánchez
Departamento de Matemáticas
Intituto Tecnologico Autonomo de Mexico
Mexico City, Mexico

Onésimo Hernández-Lerma Departamento de Matemáticas CINVESTAV-IPN Mexico City, Mexico

ISSN 2191-8198 ISSN 2191-8201 (electronic)
ISBN 978-3-319-01058-8 ISBN 978-3-319-01059-5 (eBook)
DOI 10.1007/978-3-319-01059-5
Springer New York Heidelberg Dordrecht London

Library of Congress Control Number: 2013944758

Mathematics Subject Classification (2010): 91A25, 91A50, 93C55, 93E20, 90C40, 49J55

© David González-Sánchez and Onésimo Hernández-Lerma 2013

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Exempted from this legal reservation are brief excerpts in connection with reviews or scholarly analysis or material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work. Duplication of this publication or parts thereof is permitted only under the provisions of the Copyright Law of the Publisher's location, in its current version, and permission for use must always be obtained from Springer. Permissions for use may be obtained through RightsLink at the Copyright Clearance Center. Violations are liable to prosecution under the respective Copyright Law.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

While the advice and information in this book are believed to be true and accurate at the date of publication, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

To my family.

DGS

To Marina, Max, and Lucas. OHL