

Forschungsberichte Elektrische Antriebstechnik und Aktorik

Band 10

Nizar Khateeb

**Reliable Modelling of Electromechanical Systems
using Macromodell Approach for Control Purposes**

Shaker Verlag
Aachen 2011

Bibliographic information published by the Deutsche Nationalbibliothek

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <http://dnb.d-nb.de>.

Zugl.: München, Univ. der Bundeswehr, Diss., 2011

Copyright Shaker Verlag 2011

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publishers.

Printed in Germany.

ISBN 978-3-8440-0593-6

ISSN 1863-0707

Shaker Verlag GmbH • P.O. BOX 101818 • D-52018 Aachen

Phone: 0049/2407/9596-0 • Telefax: 0049/2407/9596-9

Internet: www.shaker.de • e-mail: info@shaker.de

Reliable Modelling of Electromechanical Systems using Macromodel Approach for Control Purposes.

Nizar Khateeb

Macromodelling is a new methodology for:

1. Modelling of static characteristics
2. Curve fitting of 2-variable functions
3. Dimension reduction of large-size data
4. Co-Simulation-Alternative by exporting the data analytically

Macromodell definition

is A compact modell of the electromechanical system that captures the essential physics, it is developed to serve as a link between two simulation environments and to reduce the computational time and to give flexibility by control design

Macromodelling procedure

Generally, the macromodeling procedure can be divided into two tasks:

1. Reducing the amount of the data required to describe the studied system
2. Finding the appropriate analytical formulation of the reduced data.