

Preface

The use of optimization techniques is becoming essential to address rapidly increasing stringency of requirements for automotive systems. In particular, there is a growing interest in systematic optimization approaches that can be exploited for automotive vehicle development at various levels. Against this background, a workshop organized by the Austrian Center of Competence in Mechatronics (ACCM) was held at the Johannes Kepler University in Linz from July 15 to 16, 2013. This workshop aimed to bring together specialists in optimization theory and methods on one hand and practitioners from inside the automotive community. The purpose was to foster an exchange of information and an open discussion between representatives of different areas and approaches about the problems, methods, tools and about applications of optimization in general, and dynamic optimization, in particular.

The contents of this book are peer reviewed versions of selected workshop contributions and are structured into four parts, starting with a survey on optimization fundamentals and tailored methods, then followed by three parts addressing different types of automotive optimization problems, at vehicle-to-vehicle and inter-vehicle applications level, at single vehicle powertrain optimization level and finally at purely engine-related level.

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