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MECHANICS, INTEGRABILITY, AND CONTROL

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PREFACE

We are presenting the collection of four papers on Mechanics, Integrability, and Control,

written by Borislav Gajić, Jovo Jarić and Dragoslav Kuzmanović, Velimir Jurdjević, and Dušan Zorica.

In selecting the authors for the present issue,

we tried to cover four different fields of contemporary Classical Mechanics that are subject of intensive research.

Thus, the article of B. Gajić deals with a basic notion of a motion of a heavy rigid body

fixed at a point in three-dimensional as well as in higher-dimensional spaces,

focusing on the questions of integrability and integration techniques.

J. Jarić and D. Kuzmanović present both classical and new results

about physics of interfaces from stand point of continuum physics.

In the work of V. Jurdjević the presentation centers on the optimal control theory

with integrable Hamiltonian systems through a class of variational problems inspired by the theory of elastic rods.

Finally, D. Zorica presents new results from dynamics of visco-elastic rods of fractional derivatives type.

Therefore both rigid and deformable body problems of Classical Mechanics are covered.

We hope that the book will be helpful both for young readers,

undergraduate and graduate students, and experienced researchers,

who wish to get a pedagogical introduction,

but at the same time a reasonably brief, timely overview of the state of the art

which can bring them shortly to the frontiers of the temporary science.

We are expressing our gratitude to Professor B. Stanković for offering us to be the editors of this volume.

We are thankful to the authors for accepting our invitation,

for their enthusiasm and efforts in creating the manuscripts.

We use the opportunity to thank also the referees

and Dragan Blagojević, the production editor,

for great and important job they have done in the preparation of the book.

Jun 2013, Novi Sad and Belgrade

Teodor Atanacković
Vladimir Dragović
the Editors

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