

## Organizers



Dr. Radek Kolman  
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Academy of Sciences of the Czech Republic  
Prague  
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and



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Tallinn, Estonia

In collaboration with  
European Mechanics Society  
Czech Society for Mechanics

## Prague – European City of Culture 2000

Prague is the beautiful capital of the Czech Republic. Standing in the 650 years old Charles bridge, surrounded by Baroque statues and Gothic bridge towers, looking at the castle, residence of the Czech kings and presidents, situated above the river is an experience you will never forget. Some visitors say it is the nicest panorama of the whole world. No wonder, Prague has kept its ancient ambience. The oldest market place was documented by a Jewish merchant already in 865. Today with population of 1,4 million and more than 500 spires it is also called "The Heart of Europe" or "The Golden Prague".

For details see <http://ec540.it.cas.cz>

**EUROMECH**  
EUROPEAN MECHANICS SOCIETY

**EUROPEAN  
MECHANICS  
SOCIETY**

**EUROMECH**  
Colloquium 540

## Advanced Modelling of Wave Propagation in Solids

**Prague, Czech Republic**  
**October 1 - 3, 2012**

SECOND ANNOUNCEMENT  
AND  
CALL FOR PAPERS





## Scope

The EUROMECH Colloquium 540 aims to bring together engineers and scientists with interest in modelling of wave propagation in solids. Wave phenomena play important role in various scientific fields such as continuum mechanics, material science, and different branches of physics. The reliable modelling of wave propagation in solids is of utmost importance in industry, material science, security and defense – its development is of theoretical and experimental significance as well. The main purpose of the Colloquium is to discuss novel and recent methods of wave propagation modelling and to consider expected credibility of results especially in cases when comparison with those of experiment is not available.

The Colloquium will concentrate on topics related to effects of linear and nonlinear, to solitary waves, to dispersive wave propagation in inhomogeneous solids, to waves in materials with microstructures, etc. Attention will also be devoted to up-to-date formulations of non-linear constitutive equations in wave propagation problems, thermomechanical couplings, finite strains, strain rate effects, viscoplasticity, damage, phase transformations, and to descriptions of material response under complex thermomechanical loading.

The wave propagation modelling is based on analytical and numerical methods both having their inherent scopes of validity that has to be subjected to verification analysis. The recent advances of numerical approaches and strategies should also be discussed. To guarantee the accuracy and stability of numerical approaches, the proper understanding of methods, and ways leading to suppressing artifacts and parasitic effects, are essential. Among these are size effects, dispersion, attenuation, appearance of spurious modes, evanescent waves, etc.

Research groups should present their views of existing modelling methods, propose new approaches, and discuss important results obtained from their analyses and experimental tests. Talks on efficient and reliable computational procedures necessary for processing wave propagation problems are encouraged. Theoretical, computational as well as experimental contributions on the wave propagation are welcome.

## Topics

- **Linear and non-linear waves in solids, waves in strongly dispersive media, solitary waves.**
- **Wave propagation in inhomogeneous materials and in materials with microstructures.**
- **Wave propagation modelling with non-linear constitutive equations, dynamic response of materials under complex thermomechanical loading.**
- **Recent development of analytical and numerical methods of wave propagation problems in solids.**
- **Verification and validation of modern numerical methods, analysis of their accuracy and stability.**
- **Experimental techniques in wave propagation in solids, destructive and nondestructive testing, determination of dynamic behavior of materials.**

## Call for Papers

Authors are invited to contribute **papers** on the areas of the conference topics. Presentation will be of 25 minutes duration including discussion and should be presented in English. Contributors are requested to submit to the Organizing Committee **a one page long abstract** of proposed paper including title, author's name, affiliation, and **contacts**, either by e-mail, or by mail, till the end of **February 2012**. Abstracts will be reviewed by organizers and authors will be notified about acceptance by **April 2012**.

## Proceedings

Colloquium participants could take advantage of the invitation to submit a full-length paper during the Colloquium. A small number of selected presenters will be invited, following the conference, to submit a full-length paper. After a review process these selected papers will appear in a **Special Issue** of the journal **Wave Motion**. The papers will undergo the standard review process for Wave Motion. Colloquium participants might also submit full-length papers to editors of Special Issue of journals **Engineering Mechanics**, **Applied and Computational Mechanics** and **Proceedings of Estonian Academy of Sciences**. The deadline for submitting full-length papers will be **December 31, 2012**

## Important Dates

Pre-registration deadline	<b>December 31, 2011</b>
Abstracts deadline	<b>February 29, 2012</b>
Notification of Acceptance	<b>April 15, 2012</b>
Early registration deadline	<b>May 15, 2012</b>
Early payment of registration fee	<b>May 30, 2012</b>
Colloquium	<b>October 1 – 3, 2012</b>
Full-papers deadline	<b>December 31, 2012</b>

## Chairman

Dr. Radek Kolman, *Prague* – chairman  
Dr. Arkadi Berezovski, *Tallinn* – co-chairman

## Scientific Committee

J.D. Achenbach, *Northwestern University, US*  
H. Askes, *University of Sheffield, GB*  
J. Engelbrecht, *Tallinn University of Technology, EE*  
D. Givoli, *Technion - Israel Institute of Technology, IL*  
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J. Plešek, *Institute of Thermomechanics AS CR, CZ*  
S. Sorokin, *Aalborg University, DK*  
E. Zuazua, *Basque Center for Applied Mathematics, ES*

**Early registration fee** including social programme, coffee breaks, lunches, 3 days ticket, book of abstracts:

For Ph.D. students:	<b>300 EUR</b>
For EUROMECH members:	<b>350 EUR</b>
For non-EUROMECH members:	<b>374 EUR</b>
(Membership fee for non-EUROMECH members is <b>24 EUR</b> )	

## Contacts

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## Address

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