June 11, 2016


Dear Prof. Jan Awrejcewicz

After approval of our proposal by the EUROMECH Council we are organizing a EUROMECH Colloquium on *Rolling Contact Mechanics for Multibody System Dynamics* to be held in Funchal, Madeira, Portugal in April 10-13, 2017. As the name indicates, this Colloquium is supported by the European Mechanics Society (EUROMECH) and targets a participation of about 50 specialists in the field, selected by invitation only, in a single track event that emphasis discussion while fostering scientific and technical professional experiences. With this invitation we hope that you may help us to organize this Colloquium, identify all the major players in the field and participate, thus sharing your knowledge and experience.

The purpose of the Colloquium is to provide a scientific environment in which the participants have time to present and discuss the scientific topics that contribute to the mechanical and computational challenges to handle rolling contact mechanics in the context of multibody dynamics. We are putting together a small scientific committee, with up to ten members, who can help us to achieve the goals of this Colloquium, make known this event and support its works and discussions.

We would be very honored if you could accept our invitation to be a member of the scientific committee and in this condition to help us to establish its scientific programme and to support its different scientific aspects. If you accept our invitation, we will be able to offer you a reduced registration fee.

We hope that you accept this invitation, and we are looking forward to work with you for this EUROMECH Colloquium on Rolling Contact in Multibody Dynamics

With our best regards

Jorge Ambrósio
(Wilhelm Schichlßen
João Pombo
(ULisbon, Portugal) (USTuttgart, Germany) (Heriot-Watt Univ, Scotland)
Scope of the Colloquium
The colloquium will address the scientific topics that contribute to the mechanical and computational challenges to handle rolling contact mechanics in the context of multibody dynamics. The reviewing of the classic theories in elastic and plastic contact, the computational algorithms for their efficient use in the framework of multibody dynamics applications, the tribology aspects characteristic of many of the mechanical systems of interest, the consequences of wear both in the response of the system and in the use of the background contact theories are just some of the aspects of relevance. The application of the theories, methods and algorithms, and their inherent numerical issues, to road and railway vehicle dynamics, mechanical systems with rolling elements, ball and roller bearings as well as biomechanical joints and systems are just few of the areas in which a review of the computational methods associated to rolling contact mechanics are of major importance. This Colloquium will bring together scientists with of different background and schools of thought for the purpose of presentation, discussion, and refinement of different methodologies. The participants will constitute a diverse, but consistent, group of researchers, industry specialists, advanced students dealing with the methodological aspects of rolling contact mechanics and computational multibody dynamics.

Topics
Elastic rolling contact
Plastic rolling contact
Multibody dynamics with rolling elements
Rail-wheel contact
Tire-road contact
Finite element analysis of rolling elements
Tribology of rolling elements
Biomechanics of natural joints
Roller bearing contact dynamics
Wear in rolling elements

Local Organizing Committee
J. Ambrosio, IST,ULisbon, Portugal
P. Flores, UMinho, Portugal

Scientific Committee (Tentative)
Edwin Vollebregt, VORtech, The Netherlands (edwin.vollebregt@vortech.nl)
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Jaime Dominguez, Seville, Spain (jaime@us.es)
Location
The Colloquium will be held in Funchal, Madeira, Portugal, which is not only a beautiful island in the middle of the Atlantic Ocean but has been considered the best World Island tourist destination in 2015 and site of UNESCO World Heritage locations. The city is served with an International Airport and receives many flights direct from many European and North American cities or via Lisbon. The Colloquium location will be the “VIDAMAR Resort” (https://www.vidamarresorts.com/en/) which is at a convenient distance from the center of Funchal. Notice that the Colloquium takes place in the week that precedes the Easter Sunday, and, therefore, advanced planning of your trip is advised.

Publications and Proceedings
In EUROMECH Colloquia it is not usual to publish Proceedings. However, we also recognize that many participants have their grant opportunities tied to the possibility of publishing any work presented. The publication of the papers presented will be twofold: (1) A printed book of abstracts, supported by a book of proceedings, with abstracts and full-length papers, in a USB stick format. (2) Selected presentations and papers delivered at the Colloquium will be invited to submit full-length papers to a Thematic Issue of the journal Multibody System Dynamics, which will be peer-reviewed and, if accepted, published in this journal.

Agenda for preparation (Tentative):

- July 30, 2016  Printed flyer with information
- July 30, 2016  Webpage with information
- July 30, 2016  Invitation to participants.
- December 1, 2016  Deadline for Abstracts (1 page).
- December 15, 2016  Decisions on the abstracts and acceptance of participants
- February 15, 2017  Deadline for full papers (not mandatory)