Vibrations with unilateral constraints

Dedicated to the memory of Michelle Schatzman (1949–2010)

Organizers: Laetitia Paoli
Université de Lyon, France

Adrien Petrov
Weierstrass Institute, Berlin, Germany

Description of the mini-symposium:

Vibrations can not be avoided in mechanical systems: they create noise with considerable nuisance for users and also untimely wear. A mathematical study of these phenomena is therefore crucial to predict them efficiently and to take them into account in the design of structures. This topic is intensively investigated for nearly 30 years with considerable progress in the case of deformable bodies as well as for discrete mechanical systems. This mini-symposium aims to give a review of current research and also to make a tribute to Michelle Schatzman's (8/12/1949-20/08/2010) contributions to this field.

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Program

▷ 3:00–3:25 Vibrations with Unilateral Constraints: an Overview of M. Schatzman's Contributions - Part I: Discrete Mechanical Systems.
Laetitia Paoli, Université de Lyon, France

▷ 3:30–3:55 Vibrations of a Gao Beam with Contact and Damage.
Meir Shillor, Oakland University, USA

▷ 4:00–4:25 Vibrations with Unilateral Constraints: An Overview of M. Schatzman's Contributions - Part II: Deformable Bodies.
Adrien Petrov, Weierstrass Institute, Berlin, Germany

▷ 4:30–4:55 Solving the Baton Problem using Impulse Correlation Ratio.
Yildirim Hurmuzlu, Southern Methodist University, USA

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Homage to Michelle Schatzman's memory

This message is to say how sorry I am that I cannot be with you all, today, to pay homage to Michelle and to express my sadness at her death.

Thanks to the strong spirit of scientific curiosity which inspired her work in the fields of mechanics and applied mathematics, as well as the broad approach she adopted and the fine intuition she applied to the difficult problems arising in non-smooth dynamics, Michelle has left a significant mark on the theory of dynamic contact problems and their approximation.

She had the unique ability to put her finger on the key point difficulty of a problem and tackle it with her enormous energy and strong determination. Michelle was always full of life, bubbling over with a lot of ideas and just as enthusiastic whether standing in front of a blackboard or about to set off on a hiking trip. In addition to her other talents, it was a privilege and a real pleasure to know her because of her happy disposition and her excellent sense of humour.

Michelle's departure has certainly left a gap in the world of mechanics and applied mathematics. But in a way, she is still with us today because of the strong scientific traces she has left behind with the original works she published and because of the new research paths she opened up for young researchers.

I would just like to say, quite simply, how moved I feel when I remember her and express my sadness that she is no longer with us. It means a lot to me to be able to share these emotions with you during this homage session organized with affection by Laetitia and Adrien.

Michel Raous
Directeur de Recherches CNRS, Laboratoire de Mécanique et d'Acoustique, Marseille, France.