

## **Minisymposium: Mathematical Models in Biology: Homogenization Techniques and Memory Effects**

*Organizers: M. Amar<sup>1</sup> – D. Andreucci<sup>1</sup> – P. Bisegna<sup>2</sup> R. Gianni<sup>1</sup>*

**Aims and scope.** The mathematical modelling of phenomena taking place in biological tissues containing microstructures often relies on a homogenization approach, and the macroscopic model obtained as homogenization limit is a partial differential equation, sometimes displaying memory effects.

Further mathematical issues involved in these problems are: time asymptotics, decay and stability; non standard interface conditions involving possible scaling effects; appearance of initial and boundary layers; effects of unusual microgeometries. An additional feature of interest is the study of the inverse problem for the macroscopic model, aimed to coefficients reconstruction: an example arises in Electric Impedance Tomography.

Such a wide spectrum of mathematical issues calls for connection and exchange between different expertises. This is our aim in organizing this minisymposium in the framework of 6th European Conference on Elliptic and Parabolic Problems (Gaeta, Italy 25-29 May 2009).

**Participants:** the following speakers have confirmed their participation.

Elena Beretta (Univ. of Rome La Sapienza)

Yves Capdeboscq (University of Oxford)

Sandra Carillo (Univ. of Roma La Sapienza)

Luisa Faella (Univ. of Caserta)

Daniele Graziani (INRIA)

Sara Monsurrò (Univ. of Salerno)

Giulio Schimperna (Univ. of Pavia)

Daniela Sforza (Univ. of Roma La Sapienza)

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