Palestra

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Stochastic Reaction-Diffusion Equations

Prof. Sergio Alonso

PTB Berlim
Physikalische Technische Bundesanstalt
Alemanha

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Prédio Eng. Itamar Franco

Resumo

Arrhythmias in cardiac tissue are related to irregular electrical wave propagation in the heart. Cardiac tissue is formed by a discrete cell network, which is often heterogeneous. It is shown by extensive simulation in a discrete model of cardiac tissue that a wave crossing a heterogeneous region of cardiac tissue may breakup and produce irregular patterns, provided the fraction of non-conducting links is close to the percolation threshold of the cell network. A localized region with non-conducting links surrounded by homogeneous tissue can become a source of reentry and ectopic beats in the whole system.

Informações
Secretaria da pós-graduação
Campus Universitário - Bairro Martelos
Juiz de Fora – MG - 36036-330
Tel: (32) 2102-3481

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