

Computer-assisted approach to the global dynamics of multi-parameter systems

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ABSTRACT

At the beginning of my talk, on behalf of the JSIAM President, Dr. Kazue Sako, I will give a brief introduction about JSIAM and some related activities. Then I'll proceed to the main topic of my talk, the computer-assisted approach to the global dynamics of multi-parameter systems, in which I shall show how recently developed set-oriented rigorous computational methods, combined with topological ideas, can be used to describe, in terms of the Morse decomposition and the Conley indices, an entire phase space structure of the global dynamics of dissipative systems with multi-parameter systems. I'll explain the basic idea of the method, as well as some applications, which include a new time-series analysis of meteorological data.