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Sano Computational Medicine Seminars

Monday, 18 October 2021, 14:00-15:30 (CEST)

Join us via Zoom: <https://seminar.sano.science/>

Zbigniew Struzik

Research Team Leader of Computer Modelling & Simulation,
Sano – Centre for Computational Personalised Medicine – International Research Foundation

Complex Systems - is one Nobel prize enough? Abstract

Very recently, the Nobel prize was awarded to Giorgio Parisi for research in complex systems, “for the discovery of the interplay of disorder and fluctuations in physical systems from atomic to planetary scales”.

Does this extraordinary nobilitation of all researchers in complex systems leave us with no more questions to ask or to answer? Or is this an additional stimulus to continue research into what makes physical systems complex – in particular living physical systems?

I will briefly introduce myself in the context of complex systems research with particular focus on biomedical applications. Multiscale aspects of complexity form the central part of my work. Systems of interacting units often lead to such complexity, which in the realm of biological physics could be captured by the specific focus on Network Biophysics. From this perspective, I will present an overview of the ongoing and planned research directions of the Modelling & Simulation Lab at Sano.

Zbigniew Struzik has been working on a range of subjects in the domains at the cross-section of computer science and applied interdisciplinary physics, statistical physics, and biological physics. His research has spanned a wide range of disciplines and phenomenological scales, from the physiological complexity of intertwined systems within the human body, through behavioural complexity of human individual dynamics, to collective behaviour in the economic market environment. In the variety of research contexts to which he has contributed, the common purpose is that of identifying, revealing and modelling, or at least characterizing, the properties of the systems' dynamics, essential to the emergence of the complexity of the observable records of data.



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