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MULTIDISCIPLINARY ALLIANCE IN BIOSCIENCES: MODELING, COMPUTING, TECHNOLOGY AND CLINICAL APPLICATIONS TRACK NUMBER 400

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ABSTRACT

This minisymposium aims at promoting the integration of concepts from mathematics, physics, biology, and numerics to develop physics-based models that can be used as virtual laboratories in life science and engineering. The symposium will create a multidisciplinary hub for: 1) assessing the status of health of established research areas, such as computational fluid dynamics and solid mechanics, and the challenges that arise when established approaches are applied to biological tissues; and 2) fostering the investigation of new research areas at the crossroads among materials science, engineering and medicine, such as artificial tissues and sensors for health assessment, and the exchange of ideas on new visionary projects. The organizers welcome contributions in all areas of modeling in biosciences and quantitative analysis in clinical applications and experiments. Subjects of this minisymposium comprise, but are not limited to: theoretical analysis and numerical approximation of differential systems and other models in biosciences and biotechnology; high-performance scientific computing and software implementation; imaging techniques and data analysis with statistical methods, including AI methodologies; design, implementation and realization of artificial tissues and sensing devices.