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## The Human Lymph Nodes and Digital Twins

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The human immune system consists of lymphoid tissue in different localisations, including about 600 lymph nodes. The latter can be divided in different compartments, concentrating specialised immune cells in a highly effective manner. We investigated and defined human lymph nodes applying confocal laser technologies to generate 3-D pictures and 4Dmovies. Many parameters as cell speeds tracks and interactions, such as contact numbers and times could be investigated. The data organisation open new possibilities to build mathematical models. These can be used to get new insights in the biology of cellular processes, diagnostics and to simulate drug responses. The values of different levels of abstraction as well as methods of artificial intelligence are important for analysis of real and artificial immune systems.

Presenter: HANSMANN, Martin-Leo (Frankfurt Institute for Advanced Studies)

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