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	Autore	Tveito Aslak
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	Nota di contenuto	Derivation of a cell-based mathematical model of excitable cells -- A cell-based model for ionic electrodiffusion in excitable tissue -- Modeling cardiac mechanics on a subcellular scale -- Operator splitting and finite difference schemes for solving the EMI model -- Solving the EMI equations using finite element methods -- Iterative solvers for EMI models -- Improving neural simulations with the EMI model -- Index.
	Sommario/riassunto	This open access volume presents a novel computational framework for understanding how collections of excitable cells work. The key approach in the text is to model excitable tissue by representing the individual cells constituting the tissue. This is in stark contrast to the common approach where homogenization is used to develop models where the cells are not explicitly present. The approach allows for very detailed analysis of small collections of excitable cells, but computational challenges limit the applicability in the presence of large collections of cells.