

Probabilistic approaches to solving the inverse problem of state and parameter estimation for mechanistic models of physiology: from theory to practice.

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ABSTRACT

The inverse problem of parameter and state estimation from available observations for mechanistic mathematical models of physiological processes is one of the most challenging steps in moving from theory to application. This talk will, using practical examples, present an overview of established as well as recently developed numerical approaches that approximate full posterior distributions on joint parameter and state space, potentially enabling meaningful inference even in challenging situations where traditional point estimators encounter difficulties.