The 23rd International Conference on Domain Decomposition Methods

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Abstract

Our goal is to develop robotized needle insertion for drug delivery in small animals. We control the robot with a real-time Finite Element simulation that provides accurate models of the deformable environment. To predict the deformations we need to solve a contact problem which is known to be time consuming. To reduce the computational time we use the domain decomposition method: the FE mesh is split in several domains in order to extract parallelism for GPU computing and to concentrate the computation time around the needle.

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