



**Molecular Biotechnology Programme
Uppsala University School of Engineering**

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Author	Anders Kaplan	
Title (English)	On whole-cell modelling and simulation	
Title (Swedish)		
Abstract	<p>Computer simulations have been used in biology for a long time, but it is only recently that simulations of a whole cell at a time have been considered, due to the enormous complexity and computation cost. However, the method is without doubt very promising, and may soon become computationally feasible thanks to the rapid development of computer hardware.</p> <p>This work consists of an analysis of the whole-cell modelling and simulation process, a new notation to be used for cell models, and an efficient simulation algorithm. Its intention is to provide the theoretical foundation for a modelling and simulation framework called Smartcell that is being developed at the EMBL.</p>	
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