Raising Semantic and Syntactic Dimensionality for Model Complexity Reduction
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The talk will first introduce the concepts of semantic and syntactic dimensionality for spaces hosting the equational representations of certain classes of models. Subsequently, an overview will be presented of how increasing the semantic dimensionality of an equational system - by utilization of higher order hyperlinear algebras - can lead to a complexity reduction associated with the participating equational representation of systemic models. A demonstration will also be given on how further complexity reduction can be achieved, by increasing the dimensionality of space where associated syntactic representations of a model can be embedded and will demonstrate that the process of term rewriting and solving can be replaced by the process of concatenation and its homomorphism to tensor multiplication.