

Observable Operator Models

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If we investigate stochastic processes which have their own rules in the background then we have to choose a model. A new possibility is to use OOMs (Observable Operator Models). A widely used class of models for stochastic systems is hidden Markov models. In these models the Markov process is unknown but every state of the Markov process generate an observable output according to a probability distribution. We see only the outputs and we have to find out the model parameters based on the outputs. The OOMs are another view of this problem: instead of sequence of states we see sequence of operators according to the outputs. In the structure of OOM the initial distribution of the process is known and the operators generate the next output from the previous one. Using OOMs we would like to analyze stochastic processes and to predict the changes of the process.