Analysing existence of states

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February 18, 2012

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Biological example

- Two proteins in a system
- Antigen that binds to both
- Impossible to tell which one binds

Definition

- Different parameter values correspond to the same model
- Model is unidentifiable

$$\tilde{X}(t) = Pr(\tau > t)A_1^t\, x(0) + \sum_{j=0}^{t-1} Pr(j < \tau \leq j+1)\, A_2^{t-j}A_1^j\, x(0)$$

	ER-Src	pBABE
Tamoxifen (TAM)	9 timepoints	4 timepoints
Ethanol	3 timepoints	3 timepoints

Table: Combinations of drugs in different runs

ER-Src

- Src expression leads to development of cancers

pBABE

- Retroviral vector, delivers genes into genome
- Empty insertion to check position of insertion

Hirsch et al. 2010