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Lambda phage genetic switch as a system with critical behavior

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## Highlights

- Lambda phage as one of the best studied molecular systems allows for predictive computational modeling of kinetics of changes in expression levels of the genes involved in the network controlling lytic or lysogenic state of the host cell
- Kinetic modelling of the lambda phage control network shows why the host cell settle exclusively in one of the states. Once lytic or lysogenic state is reached it never returns to the opposite state. The lambda phage genetic switch exhibits critical systems behaviour.
- This behaviour is not the result of changes in environmental conditions but it is the results of architecture of the network controlling the decision.

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