

Abstract Submitted
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Assigning p-values to complex biological systems NATALIE ARKUS, MICHAEL BRENNER, Harvard University — Models of complex biological systems with many free parameters do not describe a unique data set, nor is a data set uniquely described by one of them. Their conclusions may therefore not reveal an underlying biological phenomenon, but rather be model or parameter specific. We propose a method of assigning p-values to these models and their conclusions. As an example, we consider feedback and open loop models of the e. coli heat shock response system. We determine to what degree properties associated with the feedback loops are a result of the loops themselves or of the model and its specific parameter regime.

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