

The temperature dependence of relaxation oscillators: lessons from the Belousov-Zhabotinsky reaction

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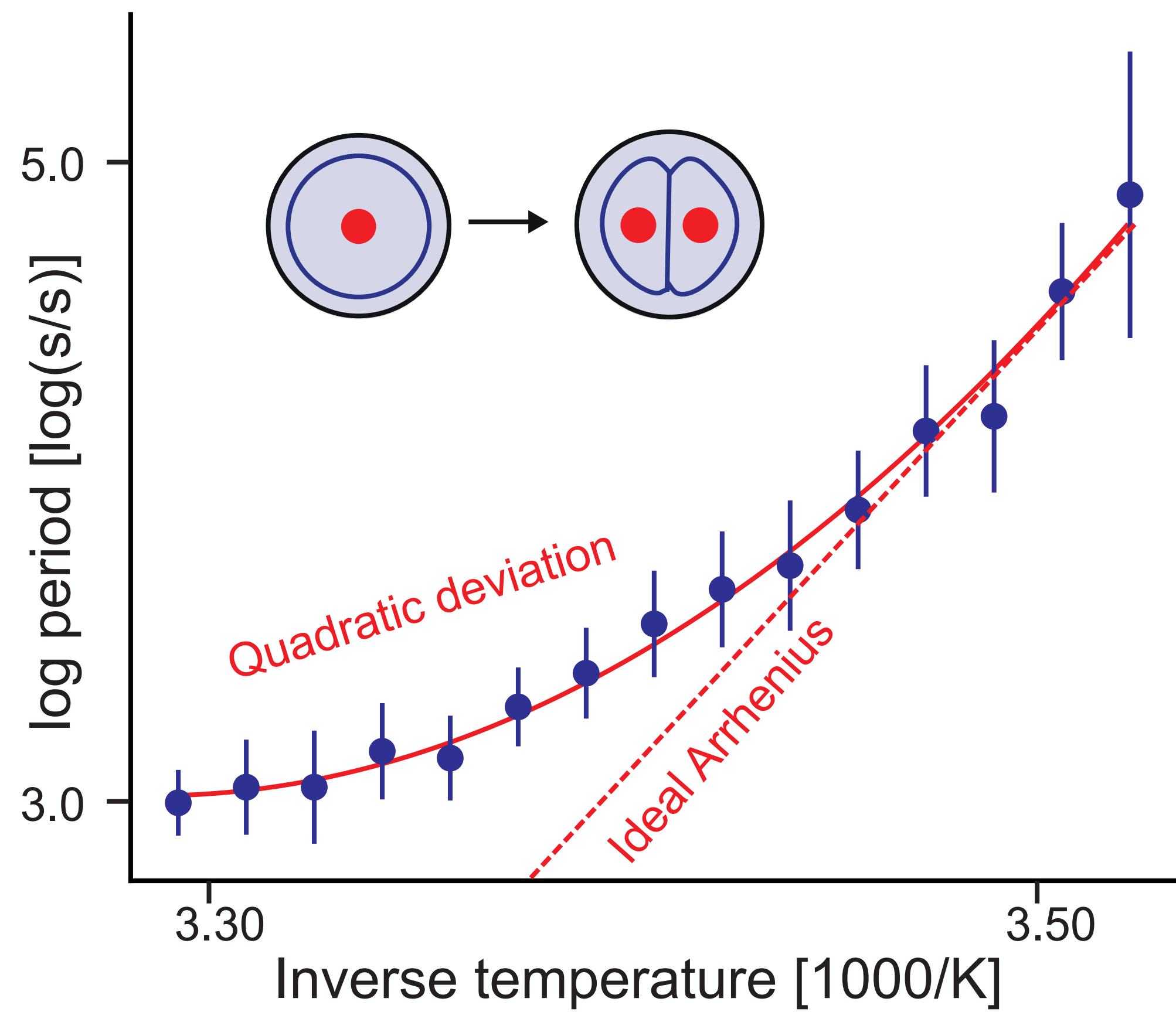
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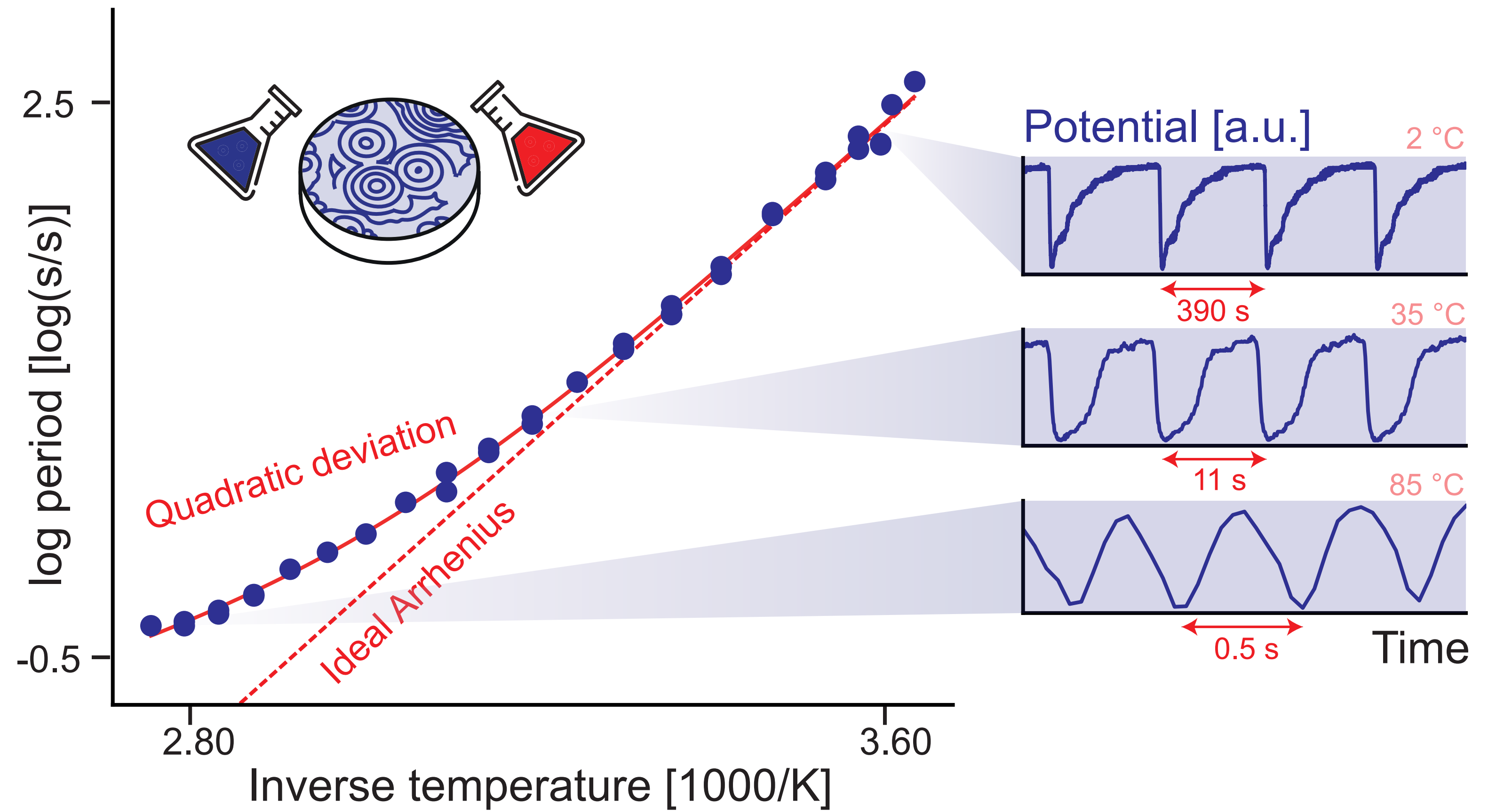
Understanding biological oscillators

Early embryonic frog cell cycle

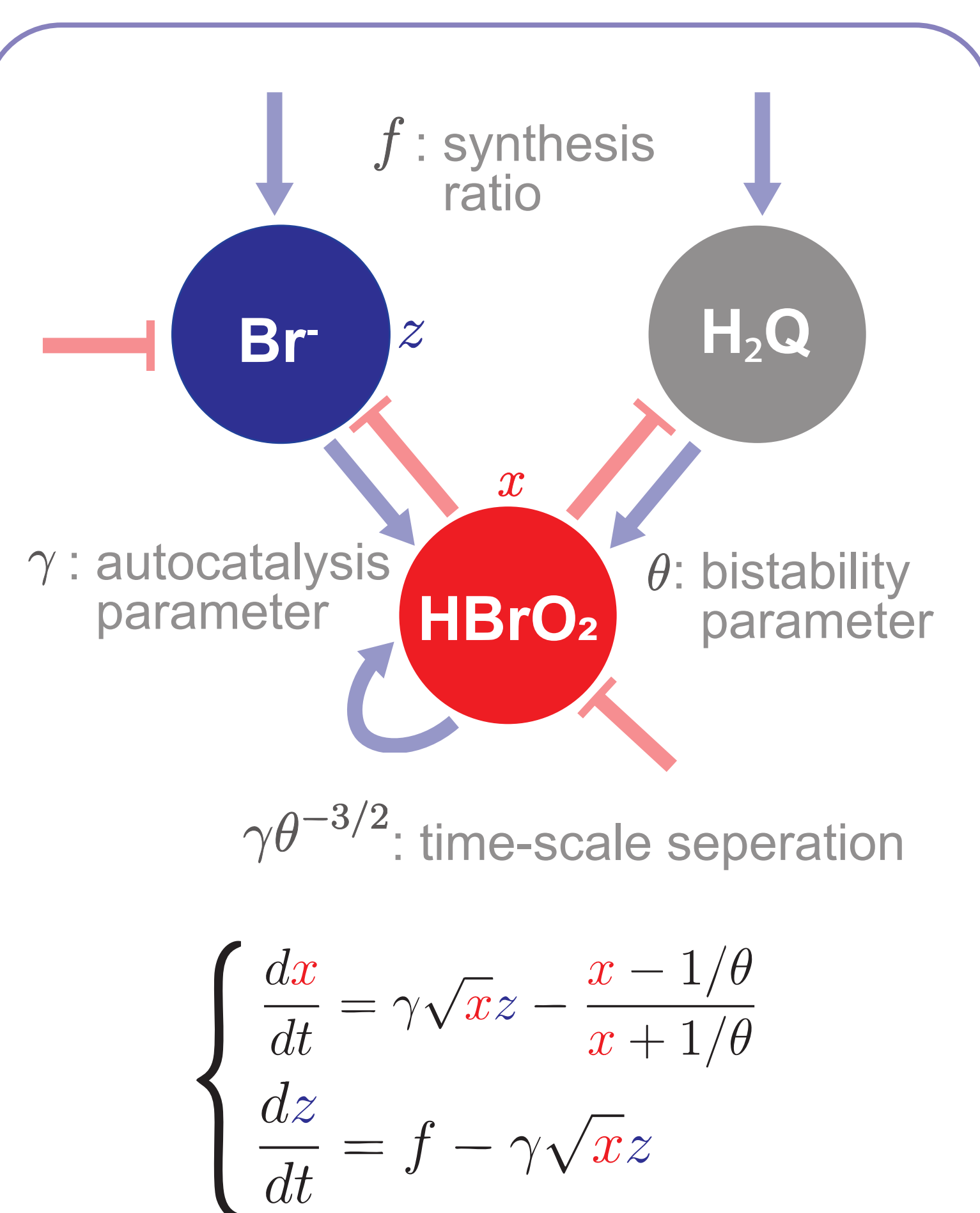


via chemical model systems.

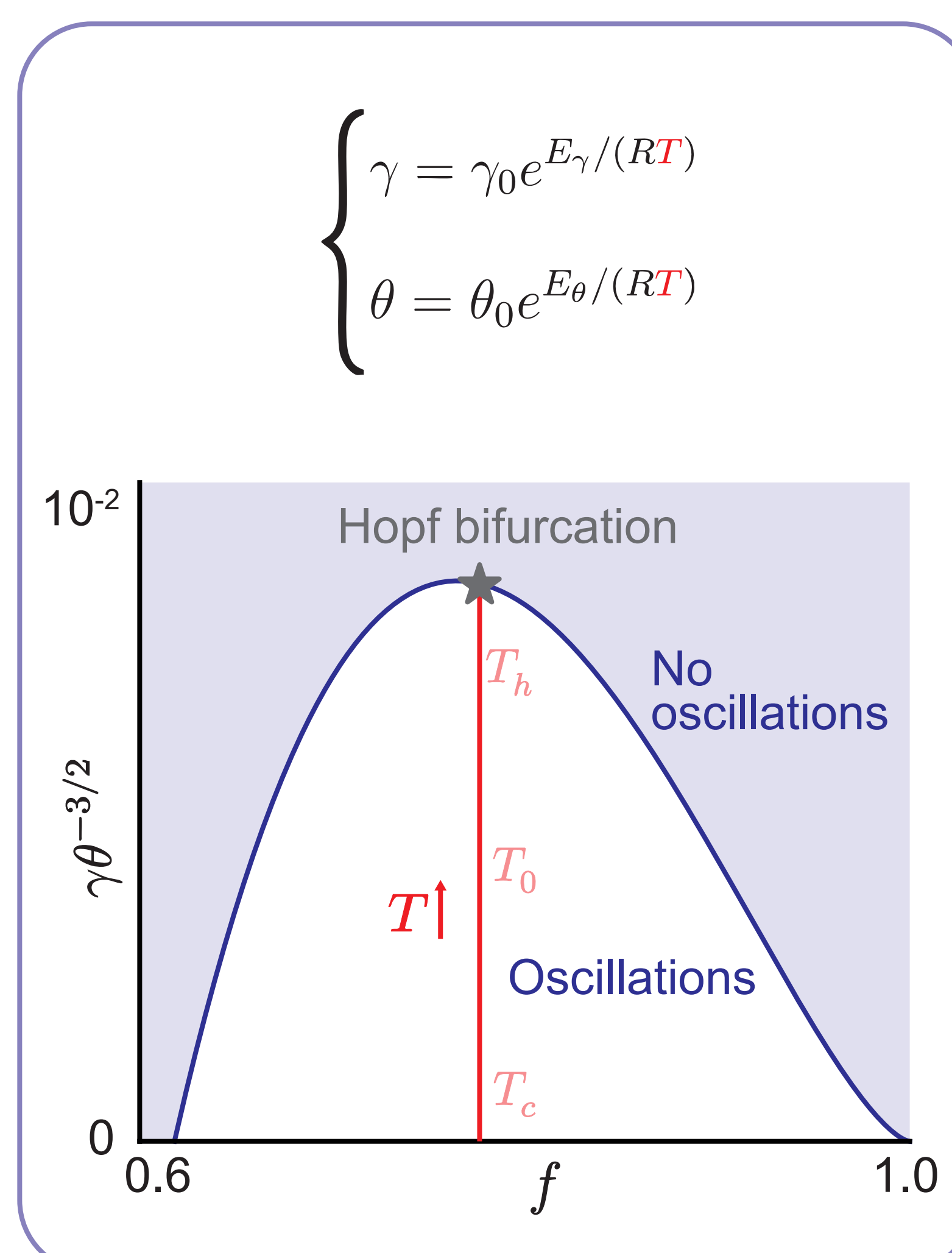
Belousov-Zhabotinsky reaction



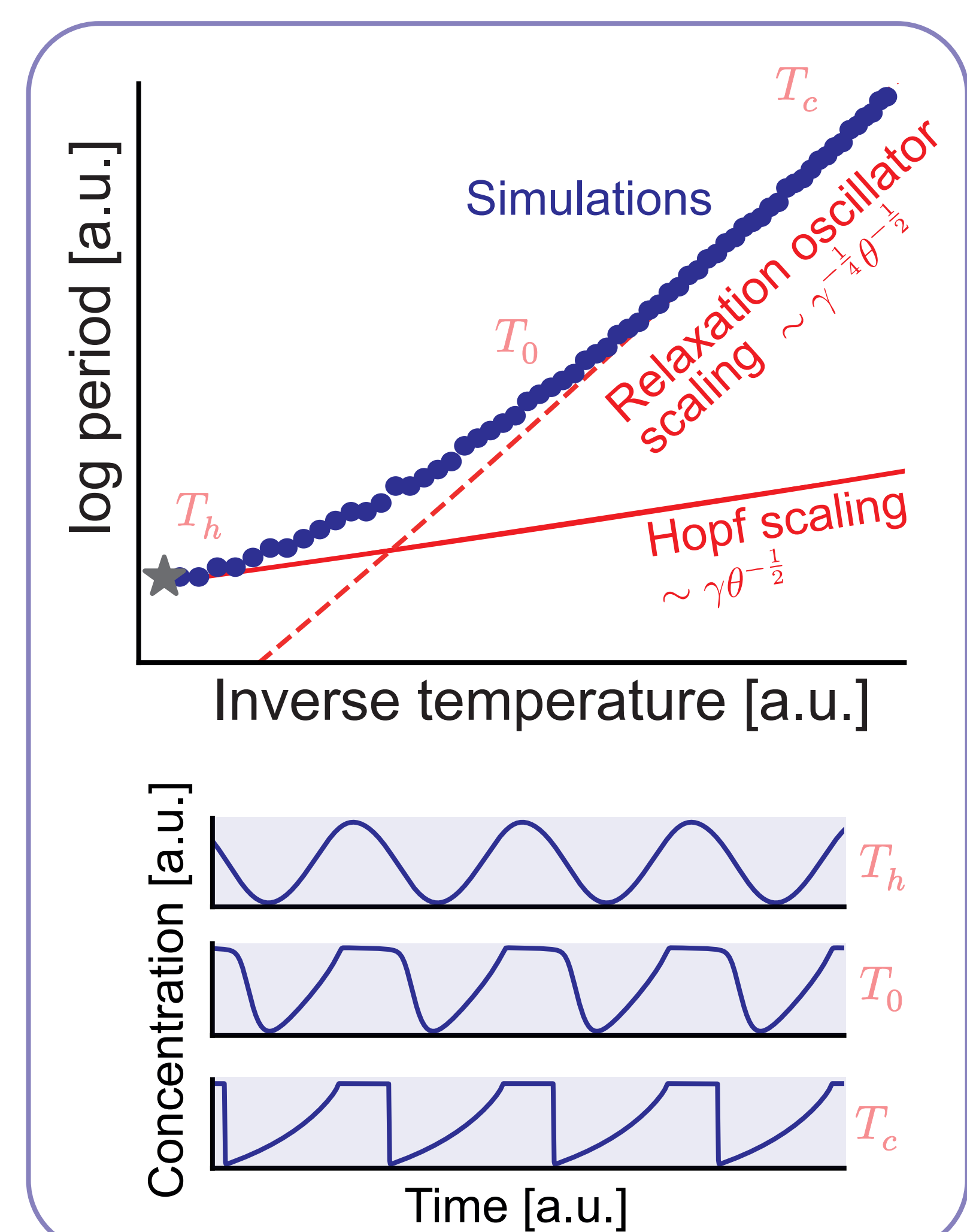
A dynamical model,



with T-dependent interactions,

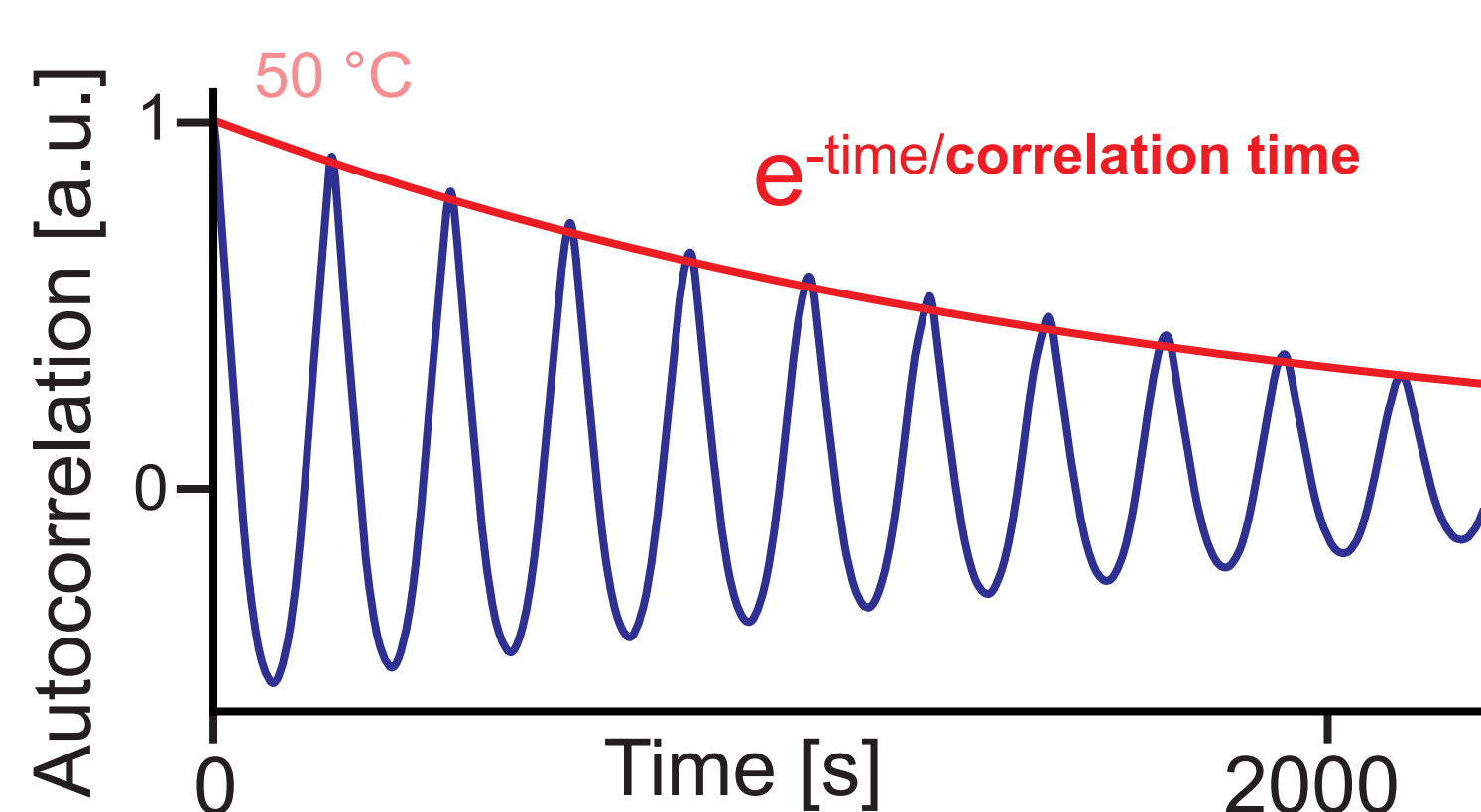


captures the birth of a relaxation-oscillator.



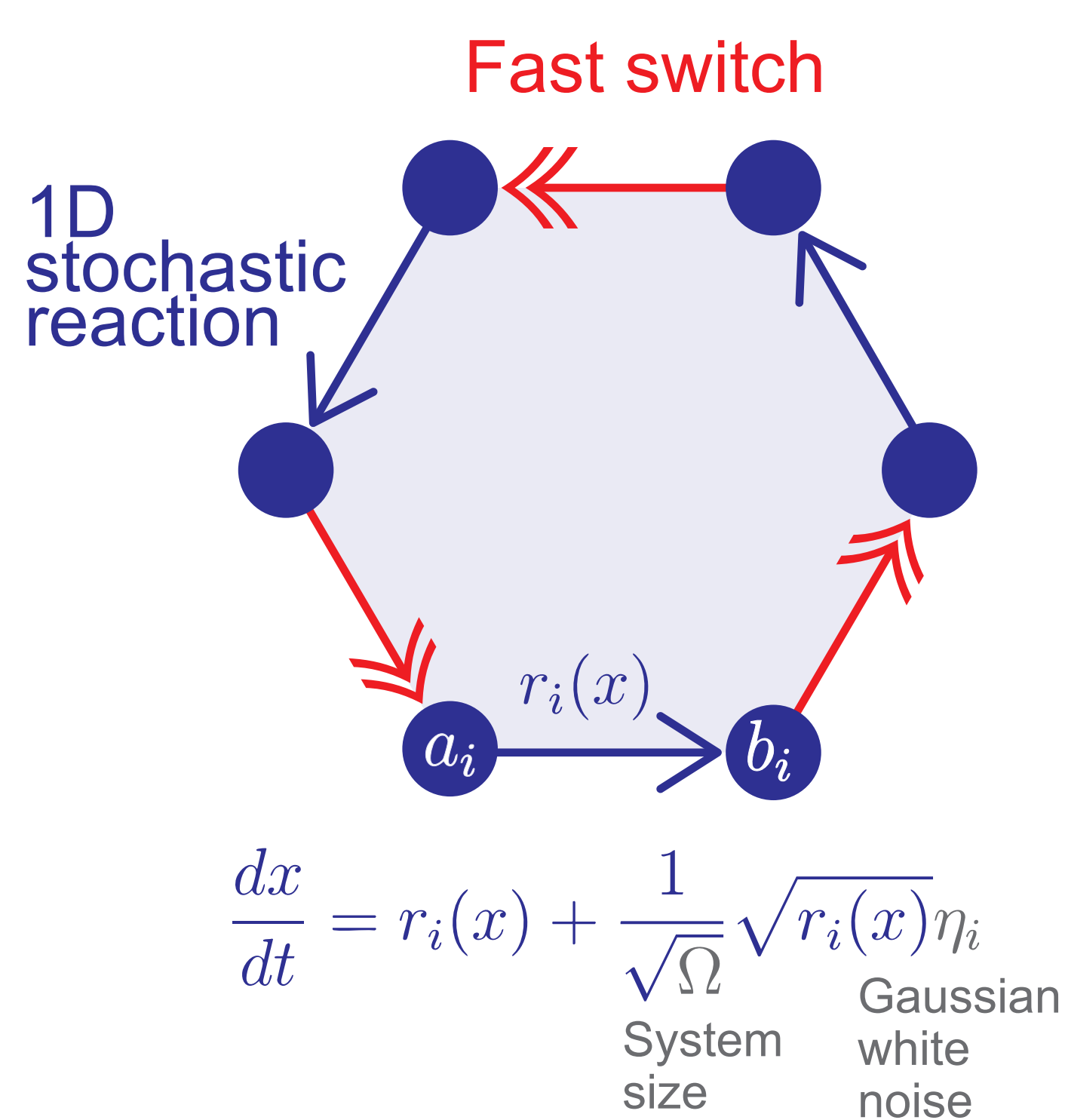
Towards a generic theory for T-dependent noisy relaxation oscillators.

Correlation time



Classes of T-dependence

1. Rate: $r_i(x) = r_i^{(0)} e^{E_i/(RT)}$
2. Amplitude: $a_i = a_i(T)$
 $b_i = b_i(T)$



Experimental test of Class 1.

