Bacterial Growth in the Presence of Several Resources

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Theories of Biodiversity

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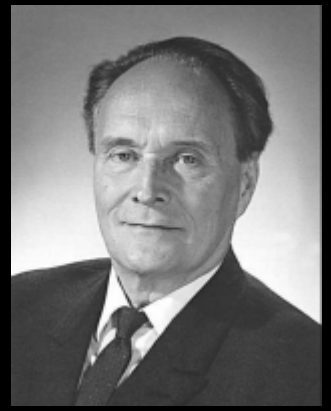
1934 - Gause’s Law:



Georgy Gause
biologist

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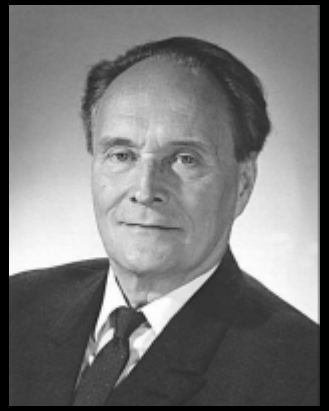
Limited resources → Extinction of species



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→ violation of the CEP

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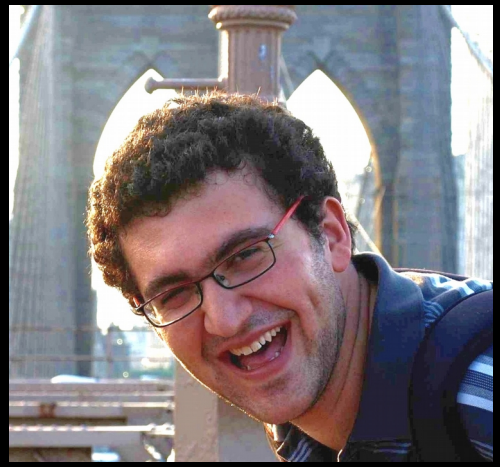
In what circumstances do competitive exclusion and sustainable coexistence take place?

Adaptive consumer-resource models can explain diauxic shifts and the violation of the CEP

Leonardo Pacciani-Mori
physicist



Samir Suweis
physicist

Amos Maritan
physicist

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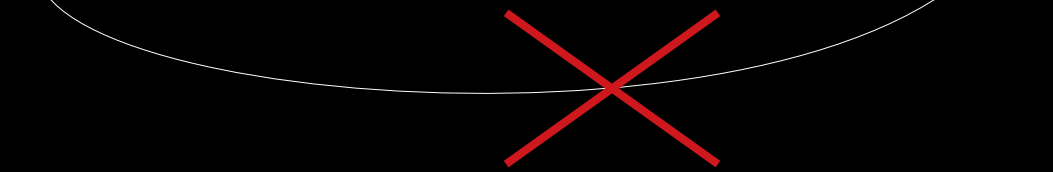

My Work

- Mathematical model:

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  - with dynamic metabolic strategies

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  - without maximization principle

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  - explaining the Plankton Paradox

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- Calibration of models with E. coli experiments

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  - explaining the Plankton Paradox
- Calibration of models with E. coli experiments
  - in stirred reactor

Questions?