Reaction networks with (generalized) mass-action kinetics: Sign vector conditions for the existence of a unique general equilibrium

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We provide sufficient conditions for the existence of a unique equilibrium (in every compatibility class and for all rate constants), based on recent findings in [2]. Notably, our results apply to general equilibria, thereby extending previous results for special (toric or complex-balanced) equilibria, see e.g. [3]. Moreover, we consider both mass-action and generalized mass-action kinetics. We illustrate our methods by examples, using our SageMath package [1] available at `https://github.com/MarcusAichmayr/sign_vector_conditions`.

References

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