

List of Publications

- [1] Eduardo D. Sontag. Remarks on input to state stability on open sets, motivated by perturbed gradient flows in model-free learning, 2021.
- [2] J Greene and E D Sontag. Minimizing the infected peak utilizing a single lockdown: a technical result regarding equal peaks. *medRxiv*, 2021.
- [3] T. Chen, M. Ali Al-Radhawi, C.A. Voigt, and E.D. Sontag. A synthetic distributed genetic multi-bit counter. 2021. Submitted.
- [4] A.P. Tran, M. Ali Al-Radhawi, E. Ernst, and E.D. Sontag. Optimization of heuristic logic synthesis by iteratively reducing circuit substructures using a database of optimal implementations. 2021. submitted.
- [5] E.D. Sontag. An explicit formula for minimizing the infected peak in an sir epidemic model when using a fixed number of complete lockdowns. *International Journal of Robust and Nonlinear Control, Special Issue on Control-Theoretic Approaches for Systems in the Life Sciences*, pages 1–24, 2021.
- [6] E.A. Hernandez-Vargas, G. Giordano, E. D. Sontag, J. G. Chase, H. Chang, and A. Astolfi. First special section on systems and control research efforts against covid-19 and future pandemics. *Annual Reviews in Control*, 50:343–344, 2020.
- [7] E.D. Sontag. *Notes on Mathematical Systems Biology*. 2021.
- [8] J. Hanson, M. Raginsky, and E.D. Sontag. Learning recurrent neural net models of nonlinear systems. *Proc. of Machine Learning Research*, 144:1–11, 2021.
- [9] M.A. Al-Radhawi, M. Sadeghi, and E.D. Sontag. Long-term regulation of prolonged epidemic outbreaks in large populations via adaptive control: a singular perturbation approach. *IEEE Control Systems Letters*, page 10.1109/LCSYS.2021.3083983, 2021.
- [10] D. Angeli, M.A. Al-Radhawi, and E.D. Sontag. A robust lyapunov criterion for non-oscillatory behaviors in biological interaction networks. *IEEE Transactions on Automatic Control*, 2021. To appear. Ppreprint in arXiv.2009.10702, 2020.
- [11] J. Miller, M.A. Al-Radhawi, and E.D. Sontag. Mediating ribosomal competition by splitting pools. In *Proc. 2021 Automatic Control Conference*, 2021. To appear.
- [12] A.C. Branco de Oliveira, M. Siami, and E.D. Sontag. Edge selection in bilinear dynamical networks. In *Proc. 2021 Automatic Control Conference*, 2021. To appear.
- [13] M. Sadeghi, J.M. Greene, and E.D. Sontag. Universal features of epidemic models under social distancing guidelines. *Annual Reviews in Control*, 51:426–440, 2021. Also in bioRxiv, 2020, <https://www.biorxiv.org/content/10.1101/2020.06.21.163931v2>.
- [14] A.P. Tran, J.H. Meldon, and E.D. Sontag. Transient diffusion into a bi-layer membrane with mass transfer resistance: Exact solution and time lag analysis. *Frontiers in Chemical Engineering*, 2:25, 2021.
- [15] K. Johnson, G. Howard, D. Morgan, E. Brenner, A. Gardner, R. Durrett, W. Mo, A. Al’Khafaji, E.D. Sontag, A. Jarrett, T. Yankeelov, and A. Brock. Integrating transcriptomics and bulk time course data into a mathematical framework to describe and predict therapeutic resistance in cancer. *Physical Biology*, 18:016001, 2021.
- [16] N. Trendel, P. Kruger, S. Gaglione, J. Nguyen, J. Pettmann, E.D. Sontag, and O. Dushek. Perfect adaptation of cd8+ T cell responses to constant antigen input over a wide range of affinity is overcome by costimulation. *Science Signaling*, 14:eaay9363, 2021.
- [17] H. Hong, J. Kim, M.A. Al-Radhawi, E.D. Sontag, and J. K. Kim. Derivation of stationary distributions of biochemical reaction networks via structure transformation. *Communications Biology*, 4:620–, 2021.

- [18] M.A. Al-Radhawi and E.D. Sontag. Analysis of a reduced model of epithelial-mesenchymal fate determination in cancer metastasis as a singularly-perturbed monotone system. In C.A. Beattie, P. Benner, M. Embree, S. Gugercin, and S. Lefteriu, editors, *Realization and Model Reduction of Dynamical Systems*. Springer-Verlag, 2021. To appear (see preprint in arXiv:1910.11311).
- [19] E.D. Sontag. Bell-shaped dose response for a system with no IFFLs. *bioRxiv*, 2020.
- [20] J. Miller, M.A. Al-Radhawi, and E.D. Sontag. Mediating ribosomal competition by splitting pools. *IEEE Control Systems Letters*, 5:1555–1560, 2020.
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- [22] A.L. Williams, J.E. Fitzgerald, F. Ivich, E.D. Sontag, and M. Niedre. Short-term circulating tumor cell dynamics in mouse xenograft models and implications for liquid biopsy. *Frontiers in Oncology*, 10:2447–, 2020.
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