

Global analysis for spread of an infectious disease via human transportation

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We investigate the global dynamics of epidemic models describing disease transmission dynamics between multiple regions. We generalize the model developed in [1] to consider different characters of each region such as population size and transportation rate. We analyze the global dynamics in terms of the basic reproduction number. We illustrate the stability regions of equilibria in a parameter plane and discuss how human transportation between regions influences the spread of the disease. This is a joint work with Gergely Röst.

References

- [1] J. LIU, J. WU, AND Y. ZHOU, *Modeling disease spread via transport-related infection by a delay differential equation*, Rocky Mountain J. Math., 38 (2008), pp.1525–1540.