On the dynamics of perturbed positive systems -a partial survey

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Abstract

In recent years a number of results have been obtained which show that the analysis of robust stability is greatly simplified by positivity assumptions. In my lecture I will give a partial survey on robustness issues for positive linear systems. I will focus on the following topics: itemstability radii of *finite dimensional positive* linear systems under various classes of parameter perturbations, item spectral value sets and pseudospectra of uncertain positive systems, item transient behaviour of positive systems and the effect of bounded parameter perturbations. The distinctive features of *positive* linear systems with regard to both, their long term and their transient behaviour, will be brought out in relief against the general case of arbitrary linear systems.