

106. Zvi Artstein and Saša V. Raković, **Feedback and invariance under uncertainty via set-iterates**. Automatica 44 (2008), 520-525.

Abstract. We examine discrete-time control systems under non-parametric disturbances. Sets which a given control feedback makes invariant under the disturbance are analyzed via lifting the feedback operation to the space of sets. Properties of being an attractor of the disturbed dynamics and being a minimal invariant set are derived from the corresponding notions of the set-dynamics, yielding, in turn, useful characterizations, and, at times, error estimates for numerical algorithms which detect the minimal invariant sets. Concrete numerics for some examples of practical feedback rules are offered.

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