Optimal Design of Robust Control
for Uncertain Systems: a Fuzzy Approach

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Abstract: The problem of designing controls for a linear dynamic system under input disturbance is considered. The input disturbance is bounded but the bound information is either deterministic or fuzzy. The control design is purely deterministic. However, the resulting system performance is interpreted differently, depending on the bound information. It may be deterministic or fuzzy (i.e. with a spectrum of outcome to various degrees). Finally, the optimal design problem of the control scheme, in which the cost is in quadratic form, is solved.