

We provide convex necessary and sufficient conditions for the robust stability of linear positively dominated systems. In particular, we show that the structured singular value is always equal to its convex upper bound for nonnegative matrices and we use this result to derive necessary and sufficient Linear Matrix Inequality (LMI) conditions for robust stability that involve only the system's static gain. We show how this approach can be applied to test the robust stability of the Foschini-Miljanic algorithm for power control in wireless networks in presence of uncertain interference.