Robust Stability of Non Linear Time Varying Systems.

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Abstract: Systems with time-varying non-linearity confined to a given sector (Luré type) and a linear part with uncertainty formulated by an interval transfer function, are considered.

Sufficient conditions satisfying the Popov criterion for stability, which are computationally tractable, are derived.

The problem of checking the Popov criterion for an infinite set of systems, is reduced to that of checking the Popov criterion for a finite number of fixed coefficient systems, each in a prescribed frequency interval.

Illustrative numerical examples are provided.

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