

Hyperbolic stable polynomials and total positivity

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In my report I will express the condition for hyperbolicity and stability of a real polynomial in terms of the oscillation of some matrix associated with it. The result uses the Sturm chain technique as well as the classical theorems and statements about totally positive matrices formulated by Gantmacher and Krein. The resulting condition is closely related to Toeplitz positivity and the problem of parameterizing special cells of positive manifolds.

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References

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