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A note on aperiodicity condition for linear discrete systems. (English) Zbl 0572.93060
[IEEE Trans. Autom. Control 30, 1100-1101 \(1985\)](#).

Conditions for the roots of a real polynomial to lie in the segment $[0,1)$, i.e. aperiodicity conditions are obtained. The conditions are based on a nonlinear transformation which transforms the segment $[0,1)$ onto the periphery of the unit circle. The results of this note correct the earlier proposed corollary obtained by *E. Szaraniec* [see *Automatica* 9, 513-516 (1973; [Zbl 0257.93027](#))] using this transformation and present a test for verifying the aperiodicity condition.

MSC:

- [93D20](#) Asymptotic stability in control theory
- [93C05](#) Linear systems in control theory
- [93C55](#) Discrete-time control/observation systems
- [93B17](#) Transformations
- [30C15](#) Zeros of polynomials, rational functions, and other analytic functions of one complex variable (e.g., zeros of functions with bounded Dirichlet integral)

Cited in **3** Documents

Keywords:

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