Papaschinopoulos, Garyfalos; **Schinas, John**

Conditions for exponential dichotomy of difference equations. (English) Zbl 0589.39001

Rad. Mat. 1, No. 1, 9-24 (1985).

Within the theory of linear differential equations the concept of exponential dichotomy is used to study integral separation and structural stability. Aiming at similar results at difference equations necessary and sufficient conditions for the existence of an exponential dichotomy for the system $x(n+1) = A(n)x(n)$, $n = 0, 1, 2, ...$, where A(n) is a bounded, invertible matrix, are derived. The obtained results are discrete analogues of the respective theorems in the continuous case. Applications to qualitative analysis of systems of difference equations are announced for a forthcoming paper.

Reviewer: D.Dorninger

MSC:

39A10 Additive difference equations
39A12 Discrete version of topics in analysis

Keywords:

diagonal dominance criterion; exponential dichotomy; stability; existence; systems