
Non-almost periodic and non-asymptotically almost periodic solutions of limit periodic and almost periodic difference systems

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Abstract

This is a joint work with Petr Hasil. We study limit periodic and almost periodic homogeneous linear difference systems whose coefficient matrices belong to a group. We find such groups that the systems, which do not have any non-zero asymptotically almost periodic solution, form a dense subset in the set of all considered systems. Then, we find a very general condition on the groups under which the systems, whose fundamental matrices are not almost periodic, form a dense subset as well. The treated problem is analysed for the elements of the coefficient matrices from an infinite field with an absolute value. Nevertheless, the presented results are new even for the field of complex numbers.

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