

Spatial dynamics of elliptic equations on the entire space: periodic and quasiperiodic solutions

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Abstract

We consider positive solutions of elliptic equations on \mathbb{R}^{N+1} with some predetermined behavior (such as decay and symmetry, or periodicity) in the first N variables. We examine the behavior of such solutions in the remaining variable, say y . Using spatial dynamics and KAM-type theorems, we in particular show the existence of solutions which are quasiperiodic in y .