(h, k)-Trichotomies and asymptotics of nonautonomous difference systems
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Discrete nonautonomous nonlinear systems possessing (h, k)-trichotomies are considered. We specialize to the case of solutions moving inside - and in a neighborhood of - an invariant manifold of a special kind, which we call (h, k)-hyperbolic. The Aulbach-Coppel-Knobloch transformation is then developed and used to state conditions for granting asymptotic equivalence of solutions. Our results generalize some of Aulbach's results in which the manifold considered was made of stationary points, and the system taken was autonomous.