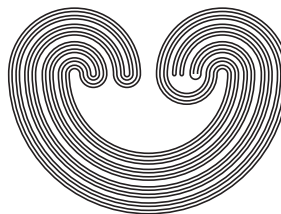


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ON *snc*-INHERITANCE OF POINTWISE ALMOST PERIODICITY IN FLOWS

by

XIONGPING DAI

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ON *sncc*-INHERITANCE OF POINTWISE ALMOST PERIODICITY IN FLOWS

XIONGPING DAI

ABSTRACT. Let H be a subnormal co-compact closed subgroup of a Hausdorff topological group T and X a compact Hausdorff space. We prove the inheritance theorem: A point of X is almost periodic (a.p.) for $T \curvearrowright X$ if and only if it is a.p. for $H \curvearrowright X$. Moreover, if $T \curvearrowright X$ is minimal with $H \triangleleft T$, then $\mathcal{O}_H: X \rightarrow 2^X$, $x \mapsto \overline{Hx}$ is a continuous mapping, and $T \curvearrowright X/H$ is an a.p. nontrivial factor of $T \curvearrowright X$ if and only if $T \curvearrowright X \times T/H$ is not minimal.

INTRODUCTION

Let X be a compact Hausdorff space as our phase space and T a Hausdorff topological group as our phase group, unless otherwise specified. We say that (T, X) is a *flow*, denoted $\mathcal{X}$ or $T \curvearrowright X$, if there exists a continuous map $T \times X \xrightarrow{(t,x) \mapsto tx} X$, called the phase mapping, such that $ex = x$ and $(st)x = s(tx)$ for all $x \in X$ and $s, t \in T$, where $e \in T$ is the identity element. If $\mathcal{X}$ has some dynamical properties and H is a closed subgroup of T , it is natural to ask whether or not the induced subflow $H \curvearrowright X$ necessarily inherits these dynamical properties.

We shall consider the pointwise almost periodic inheritance of subnormal co-compact closed subgroup action (see Theorem 3.1 and its applications Theorem 3.6, Theorem 6.5, and Theorem 6.8). In the literature Theorem 3.6 is a classical theorem that gives us the first example of minimal distal non-equicontinuous metric flows. Its proofs, available in the

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Key words and phrases. almost periodic point, flow, inheritance.

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