

Theorem 1. *Assume CH. The group $(\mathbb{R}, +)$ has a directed T_∞ -terrace $g : \mathbb{R} \rightarrow \mathbb{R}$.*

Proof. Consider the poset \mathbb{P} of partial, directed, countable T_∞ -terraces, partially ordered so that $a \leq c$ if and only if $\text{dom } a \subseteq \text{dom } c$ and $c \restriction \text{dom } a = a$. Each condition $a \in \mathbb{P}$ should satisfy the property that in fact for each $d \in \mathbb{R}$, the function $b_{(d)} : \text{dom } a \rightarrow \text{range } a \setminus \{0\}$ defined by $b_{(d)}(i) = a(i + d) - a(i)$ is a bijection.

Need to establish:

1. \mathbb{P} is countably closed.
2. It is dense to add a real number r to the range of a condition.

□