

A Note on Coherent Domains Generated by \mathbb{T}^κ *

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Abstract

In 1978, G. Plotkin, in his paper, *\mathcal{T}^ω as a Universal Domain*, conjectured that for three-element truthvalue dcpo \mathbb{T} , if $\kappa > \omega$ then function space $[\mathbb{T}^\kappa \rightarrow \mathbb{T}^\kappa]$ is *not* a retract of \mathbb{T}^κ . In this note, we constructively prove a stronger result that if $\kappa > \omega$ then function space $[\mathbb{T}^\kappa \rightarrow \mathbb{T}^\kappa]$ is *not* a retract of Cartesian product of any family of finite posets. Thus the Plotkin's conjecture is right. Furthermore, we give an answer to Problem 530 of Mislove and Lawson in *Open Problems in Topology* in a special case.

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