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by

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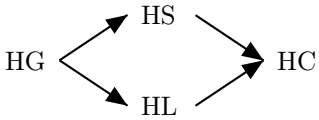
PROPERTIES AND SUPER PROPERTIES

JOAN E. HART AND KENNETH KUNEN

Abstract. The paper [2] discussed the properties HS and HL, related properties HC and HG, and the corresponding *strong* properties stHS, stHL, stHC, stHG. Here we explore the *super* properties suHS, suHL, suHC, suHG.

1. Introduction: the Super Idea

All topological spaces considered in this paper are T_3 (Hausdorff and regular). The notions of a space being HS (hereditarily separable) and HL (hereditarily Lindelöf) are standard in the literature. The paper [2] introduced the names HC and HG for two related properties; these two concepts also occur in the literature, but under different names. The four properties HS, HL, HC, HG, whose definitions are recalled below, are related by the implications:



The corresponding *strong* properties stHC, stHS, stHL, stHG were also discussed in [2]. As usual, if $\mathcal{P}$ is a property of spaces, then X is *strongly* $\mathcal{P}$ (st$\mathcal{P}$) iff all finite powers of X have $\mathcal{P}$. Now we shall introduce the four *super* properties suHC, suHS, suHL, suHG. The definitions of the strong and super properties yield the implications:

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