

Basic Operations on Preordered Coherent Spaces

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Summary. This Mizar paper presents the definition of a “Preordered Coherent Space” (PCS). Furthermore, the paper defines a number of operations on PCS’s and states and proves a number of elementary lemmas about these operations. PCS’s have many useful properties which could qualify them for mathematical study in their own right. PCS’s were invented, however, to construct Scott domains, to solve domain equations, and to construct models of various versions of lambda calculus.

For more on PCS’s, see [11]. The present Mizar paper defines the operations on PCS’s used in Chapter 8 of [3].

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The articles [16], [20], [7], [17], [15], [21], [4], [6], [22], [23], [14], [1], [13], [5], [18], [9], [19], [12], [8], [2], and [10] provide the notation and terminology for this paper.

1. PRELIMINARIES

Let R_1, R_2 be sets and let R be a relation between R_1 and R_2 . Then field R is a subset of $R_1 \cup R_2$.

¹The author visited the Department of Computer Science, University of Copenhagen, while writing the article.

