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by

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ON (PRE)-APPROACH SPACES WITHIN CONVERGENCE APPROACH SPACES

FRÉDÉRIC MYNARD

Abstract. The purpose of this note is to illustrate a parallel between (pre)topologies when seen among convergence spaces and (pre)approach spaces when seen among convergence approach spaces. This presentation appears to offer a more complete parallel than in the traditional presentation of these approach structures. This sheds some light on the reflector from the category of convergence approach spaces to that of approach spaces and even on the structure of approach spaces as such. This point of view allows for a characterization of approach spaces among convergence approach spaces represented as pointfree convergence frames as in the work of the author in this journal titled "Approach theory and pointfree convergence".

1. Introduction and preliminaries

The purpose of this note is to illustrate a parallel between (pre)topologies when seen among convergence spaces and (pre)approach spaces when seen among convergence approach spaces. This presentation appears to offer a more complete parallel than in the traditional presentation of these approach structures. This sheds some light on the reflector from the category of convergence approach spaces to that of approach spaces and even on the structure of approach spaces as such. To spell this out, let us walk through some somewhat lengthy preliminaries. Because

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