

LABELLED SETS

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Abstract: A theorem of Dilworth asserts that, if a poset P has no antichains whose size is larger than \mathfrak{m} , where \mathfrak{m} is a natural number, then P can be written as a union of \mathfrak{m} many chains. If \mathfrak{m} is instead an infinite cardinal, then the analogous statement is false, counterexamples were constructed by Perles. In recent work, Abraham and Pouzet gave a basis for the class of such counterexamples, and asked if it could be somewhat simplified. Labelled sets arise in connection with these counterexamples. We show that, when the underlying sets are \aleph_1 -dense sets of reals, then any two labelled sets embed into each other.