Rodríguez-Lorenzo, Estrella; **Cordero, Pablo**; **Enciso, Manuel**; **Mora, Ángel**
Canonical dichotomous direct bases. (English) Zbl 1428.68291
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Summary: Closure systems are usually characterized in terms of implications. The directness property of implicational systems is a key issue in their computational usability. In this work we focus on this property, studying its connection with the structure of implicational systems and the design of methods for transforming any implicational system into an equivalent direct implicational system. We introduce a new paradigm based on the bipartition of the implicational sets into two components, according to their behavior wrt the closure. In addition, we present the notions of two new direct bases, named DD-basis and canonical DD-basis, also providing two methods to compute each of them. The advantages of the dichotomous approach will be shown both from the theoretical and empirical points of view.

MSC:

68T30 Knowledge representation
06A15 Galois correspondences, closure operators (in relation to ordered sets)

Keywords:

implicational systems; closure systems; formal concept analysis; direct bases

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