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**Effective calculations in boolean propositional logic interpreted as a residual ring over \mathbb{Z}_2 .
(Cálculos efectivos en lógica proposicional booleana interpretada como un anillo de clases residuales (polinomial) sobre \mathbb{Z}_2 .)**

Bol., Soc. "Puig Adam" Profr. Mat., No. 65, 17-42 (2003).

The duality between Boolean algebras and Boolean rings and the properties of lattice orderings are used in this article to detail how a polynomial model for Boolean logic can be constructed. This model exactly translates the ideals of Logic into the ideals of Algebra and enables to perform effective calculations in Logic and even in Rule Based Expert Systems using the implementations of "Gröbner bases" and "normal forms" provided by Computer Algebra Systems. Moreover, the approach can also be used to construct a model for modal multivalued logics (and Rule Based Expert Systems using these logics).

Classification: H50

Keywords: polynomial model for boolean logic; boolean ring; propositional boolean algebra; cocoa; ideals; filters