

EFFICIENT COMPUTATION OF THE SET OF CODEWORDS OF MINIMAL SUPPORT

IRENE MÁRQUEZ-CORBELLA AND EDGAR MARTÍNEZ-MORO

ABSTRACT. In order to obtain the set of codewords of minimal support of codes defined over \mathbb{Z}_q we must compute a Graver basis of the ideal associated to such codes, see [9]. The main aim of this article is to reduce the complexity of the previous algorithm taking advantage of the powerful decomposition theory for linear codes provided by the decomposition theory of representable matroids over finite fields. Following the works of Kashyap [6] we achieve our goal for every binary linear code and for the rest several improvement are presented.

University of Valladolid. IMUVa (Instituto de Matemáticas de la Universidad de Valladolid).
E-mail address: `imarquez@agt.uva.es`

University of Valladolid. IMUVa (Instituto de Matemáticas de la Universidad de Valladolid).
E-mail address: `edgar@maf.uva.es`