Towards a Katona type proof for the 2-intersecting Erdős-Ko-Rado theorem*

Ralph Howard

Department of Mathematics, University of South Carolina

Columbia, SC 29208, USA

`howard@math.sc.edu`

Gyula Károlyi

Department of Algebra, Eötvös University

1088 Budapest, Rákóczi út 5, Hungary

`karolyi@cs.elte.hu`

László A. Székely

Department of Mathematics, University of South Carolina

Columbia, SC 29208, USA

`laszlo@math.sc.edu`

Abstract

We study the possibility of the existence of a Katona type proof for the Erdős-Ko-Rado theorem for 2- and 3-intersecting families of sets. An Erdős-Ko-Rado type theorem for 2-intersecting integer arithmetic progressions and a model theoretic argument show that such an approach works in the 2-intersecting case.