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**Richard Anstee** and **Peter Keevash\*** ([keevash@its.caltech.edu](mailto:keevash@its.caltech.edu)), Department of Mathematics, Caltech, Pasadena, CA 91125. *Pairwise intersections and forbidden configurations.*

Let  $f_m(a, b, c, d)$  denote the maximum size family of a family  $\mathcal{F}$  of subsets of an  $m$ -element set so that there is no pair  $A, B \in \mathcal{F}$  with

$$|A \cap B| \geq a, \quad |\bar{A} \cap B| \geq b, \quad |A \cap \bar{B}| \geq c, \quad |\bar{A} \cap \bar{B}| \geq d.$$

By symmetry we can assume  $a \geq d$  and  $b \geq c$ . We show that  $f_m(a, b, c, d)$  is  $\Theta(m^{a+b-1})$  if either  $b > c$  or  $a, b \geq 1$ . We also show  $f_m(0, b, b, 0)$  is  $\Theta(m^b)$  and  $f_m(a, 0, 0, d)$  is  $\Theta(m^a)$ . This can be viewed as a result concerning forbidden configurations, and provides further evidence for a conjecture of Anstee and Sali.

Our key tool is a strong stability version of the Ahlswede-Khachatrian Complete Intersection Theorem, which is of independent interest. (Received August 07, 2005)