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Lucas Kramer* (lkramer@carroll.edu), Helena,, MT, and **Ryan R Martin** and **Michael Young**. *Forbidding diamonds in the Boolean lattice.*

The two dimensional Boolean lattice, also known as the diamond, consists of four distinct elements $A \subset B, C \subset D$. A Diamond-free family in the n -dimensional Boolean lattice is a family of sets that does not contain a copy of the Diamond.

There is an example of a diamond-free family in the n -dimensional Boolean lattice of size $(2 - o(1)) \cdot \binom{n}{\lfloor n/2 \rfloor}$. In this talk we will discuss how we found an upper bound of $(2.25 + o(1)) \cdot \binom{n}{\lfloor n/2 \rfloor}$. We also discuss that the so-called Lubell function is bounded by $2.25 + o(1)$, which is asymptotically the best possible under currently known approaches. (Received September 16, 2014)