1047-05-456 **Jerrold R. Griggs*** (j@sc.edu), Department of Mathematics, University of South Carolina, Columbia, SC 29208. *Diamond-free families of subsets.* Preliminary report.

We consider the problem of determining the maximum size $\mathrm{La}(n, H)$ of a family $\mathcal{F}$ of subsets of the set $\{1, 2, \ldots, n\}$, subject to the condition that a certain subposet H is excluded. For instance, Sperner's Theorem solves the problem for H being a two-element chain P_2, giving $\mathrm{La}(n, P_2) = \binom{n}{\lfloor \frac{n}{2} \rfloor}$. We survey results of this kind, and focus on the newest bounds on $\mathrm{La}(n, H)/\binom{n}{\lfloor \frac{n}{2} \rfloor}$ when H is the four-element diamond poset B_2 (joint with Linyuan Lincoln Lu). (Received February 03, 2009)