1023-05-333 **Joseph P Kung*** (kung@unt.edu), Department of Mathematics, University of North Texas, P.O. Box 311430, Denton, TX 76203-1430. *Can anything general be said about minor-closed classes of matroids?* Preliminary report.

Choose any set $\mathcal{E}$ of matroids. Then the class of matroids not containing any matroid in $\mathcal{E}$ as a minor is a minor-closed class. Thus, the obvious answer to the question seems to be "no."

If $\mathcal{C}$ is a class of matroids containing a rank-n matroid for every non-negative integer n, let $h(n)$ be the maximum number of points or rank-1 flats in a rank-n matroid in $\mathcal{C}$. The growth rate conjecture, made in 1980 and published somewhat later, says that if $\mathcal{C}$ is a minor-closed class, then only four things can happen: (1) $h(2)$ is infinite, (2) $h(n)$ is linear, (3) $h(n)$ is quadratic, and (4) $h(n)$ is exponential. The conjectured gap between linear and quadratic was proved by Gerards, Geelen and Whittle in 2003. The quadratic-exponential gap now looks very plausible, although it remains open at present.

In this talk, I will discuss conjectures based on the intuition that "asymptotically," minor-closed classes having quadratic or exponential size functions are unions of a finite number of varieties. Much of the talk will be about how to define "asymptotically" so as to make the conjectures plausible as well as meaningful. (Received September 06, 2006)