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**Arnold H Yim\*** (ayim@purdue.edu), Department of Mathematics, Purdue University, 150 N University St, West Lafayette, IN 47907. *Homological Properties of Determinants Arrangements.*

An important aspect of a divisor  $Y$  on a complex analytic manifold  $X$  is its *singular locus*. One can view the divisor  $Y$  as “well-behaved” if the singular locus consists of isolated points, or if the singular locus is perhaps large but “not very complicated” in a suitable sense. In this talk, we take the latter position. The best possible case in this view is that of normal crossings where the singular locus looks locally like a union of coordinate hyperplanes. By studying the logarithmic flows on  $X$  that stabilize (are tangent to)  $Y$ , one can understand just how complex the singular locus is. In particular, if the collection of these logarithmic flows form a free module, then the singular locus is simple and we say that the divisor is a free divisor.

Free divisors show up naturally in many different settings. For example, many of the classically arising hyperplane arrangements (such as braid arrangements and Coxeter arrangements) are free. Though much is known for hyperplane arrangements, things become more difficult when we consider arrangements of more general hypersurfaces. In this talk, we explore freeness for determinantal arrangements (arrangements defined by minors of a generic matrix) and generalize some of the classical results in this new setting. (Received August 01, 2015)