980-51-204 **Michael J Falk*** (`michael.falk@nau.edu`), Dept. of Mathematics and Statistics, Northern Arizona University, Flagstaff, AZ 86011-5717. *The line geometry of resonance varieties.*

Let G be a matroid, and let A be the Orlik-Solomon algebra of G over a field R. We study the *resonance variety* $\mathcal{R}_m$, the set of elements of $A^1 \cong R^n$ having $(m+1)$-dimensional annihilator in A^1.

There is a combinatorial decomposition of $\mathcal{R}_m$, for R sufficiently large, in terms of neighborly partitions Γ of G. In this talk we focus on the geometry of these "combinatorial components." Let $\widehat{\mathcal{R}}_m$ be the projective image of $\mathcal{R}_m$. We show that the piece of $\widehat{\mathcal{R}}_1$ arising from Γ is the carrier of a projective line complex, the intersection of linear line complexes determined by the subspace arrangement $\mathcal{D}(G,\Gamma)$ of *directrices* .

Using this approach we answer in the *negative* a question posed by A. Suciu, whether the components of $\mathcal{R}_m$ are linear for any (algebraically closed) field R. This negative answer contradicts the assertion made by the author in a recent preliminary report (AMS Abstracts Vol. 23, Issue 2, #978-14-94). For the underlying matroid of the Hessian arrangement, with R an algebraically closed field of characteristic three, we exhibit a component of $\widehat{\mathcal{R}}_1$ which is an irreducible cubic hypersurface in $\mathbb{P}^4$. (Received August 18, 2002)