984-51-199 **Michael J. Falk*** (michael.falk@nau.edu), Dept. of Mathematics and Statistics, Northern Arizona University, Flagstaff, AZ 86011-5717. *Projective line complexes and resonance varieties.* Preliminary report.

Let A be the Orlik-Solomon algebra of an arrangement or matroid, with coefficients in a field $\mathbb{K}$. The first resonance variety $\mathcal{R}_1(A,\mathbb{K})$ of A is the (projectivized) set of elements of $A^1 \cong \mathbb{K}^n$ annihilated by some nonproportional element of A^1.

The variety $\mathcal{R}_1(A,\mathbb{K})$ decomposes into "combinatorial components," each of which is the union of lines transversal to an arrangement of projective subspaces. These lines lie in the intersection of Schubert varieties in special position in the Grassmannian $G(2,n)$ over $\mathcal{K}$. I

n this talk we will examine the problem of determining the degree and irreducibility of the combinatorial components of $\mathcal{R}_1(A,\mathbb{K})$, starting with a detailed description of the strange component supported by the Hessian arrangement (or the matroid $PG(2,3)$), with coefficients coming from an algebraically closed field of characteristic three. (Received January 22, 2003)