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H Schenck*, Math Dept, UIUC, 1409 W. Green St., Urbana, IL 61801. *Resonance varieties via blowups of \mathbb{P}^2 and scrolls.*

Conjectures of Suciu relate the fundamental group of an arrangement complement $M = \mathbb{C}^n \setminus A$ to the first resonance variety of $H^*(M, \mathbb{Z})$. We describe a connection between the first resonance variety and the Orlik-Terao algebra $C(A)$ of the arrangement. In particular, we show that non-local components of $R^1(A)$ give rise to determinantal equations for $C(A)$. As a result, $Proj(C(A))$ lies on a scroll, placing geometric constraints on $R^1(A)$. The key observation is that $C(A)$ is the homogeneous coordinate ring associated to a nef but not ample divisor on blowup of \mathbb{P}^2 at the singular points of A . (Received February 15, 2011)