1037-13-279 **Graham Denham***, Department of Mathematics, University of Western Ontario, London, ON N6A5B7, Canada. *Free arrangements, nested sets, and zeroes of one-forms.*

This report is part of an ongoing project to compare the critical points of a product of (powers of) n linear forms on $\mathbb{C}^\ell$ with resonance of the associated complex hyperplane arrangement. For this, it is useful to consider the variety Σ in $\mathbb{P}^{\ell-1} \times \mathbb{P}^{n-1}$ given by the vanishing of a one-form $\omega = \sum_i a_i df_i/f_i$, where the f_i's and a_i's are linear forms and indeterminates, respectively.

The closure of Σ in the ambient space arises naturally; for example, it is known to be a complete intersection if and only if the arrangement is free. Via de Concini-Procesi's wonderful models for an arrangement, it turns out that Σ also has a smooth compactification. This can be used to describe the boundary of Σ in $\mathbb{P}^{\ell-1} \times \mathbb{P}^{n-1}$, which is seen to involve (intrinsically) the combinatorics of nested sets. (Received February 04, 2008)