1096-13-615 **Stefan O Tohaneanu*** (`tohaneanu@uidaho.edu`), Department of Mathematics, University of Idaho, 875 Perimeter Drive MS 1103, Moscow, ID 83844-1103. *Ideals generated by products of linear forms.* Preliminary report.

Let $L_1, \ldots, L_n \in R := \mathbb{K}[x_0, \ldots, x_k]$ be n linear forms with $\gcd(L_i, L_j) = 1, i \neq j$. In R consider the ideals $I_j, j = 1, \ldots, n$ generated by all distinct $j-$products of $L_1, \ldots, L_n$; i.e.

$$I_j = \langle \{L_{i_1} L_{i_2} \cdots L_{i_j}\}_{1 \leq i_1 < i_2 < \cdots < i_j \leq n} \rangle.$$

These ideals occur naturally in the study of star configurations, subspace (or hyperplane) arrangements, or in coding theory, and they contain lots of information about the objects to which they are associated. For example, if $\mathcal{A}$ is the hyperplane arrangement defined by the L_i's, I_{n-1} helps decide if a coatom in the intersection lattice of $\mathcal{A}$ is modular or not. In coding theory the heights of the ideals I_j help determine the minimum distance of linear codes. As a consequence of this one can obtain results concerning the Waring Problem for completely decomposable tensors. I will discuss about these properties, the goal being to review, if possible, all of the results in regard to this type of ideals. (Received September 07, 2013)