

SEMINARIO DI GEOMETRIA

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Results of Torelli type for logarithmic bundles of hypersurfaces in \mathbb{P}^n

Let $\mathcal{D} = \{D_1, \dots, D_\ell\}$ be a multi-degree arrangement of smooth hypersurfaces with normal crossings on the complex projective space \mathbb{P}^n and let $\Omega_{\mathbb{P}^n}^1(\log \mathcal{D})$ be the associated logarithmic bundle. When ℓ is sufficiently large, we prove a Torelli type theorem by recovering the components of \mathcal{D} as unstable smooth hypersurfaces of $\Omega_{\mathbb{P}^n}^1(\log \mathcal{D})$. Then we analyze the cases of one quadric and a pair of quadrics, which yield examples of non-Torelli arrangements. In particular, through a duality argument, we prove that two pairs of quadrics have isomorphic logarithmic bundles if and only if they have the same tangent hyperplanes. Finally we give a description of the conic case and of some line-conic cases.