

SEMINARIO DI GEOMETRIA

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Politecnico di Torino,
Dipartimento di Scienze Matematiche,
AULA BUZANO

Jean Valles

(Universite' de Pau)

Free and Nearly free curves and their associated vector bundles

Many papers are devoted to study logarithmic sheaves associated to plane curves since twenty years. A interesting family of these curves are the so called free curves; for them the logarithmic sheaf associated is a direct sum of two line bundles. When the curve is a finite set of distinct lines (i.e. a line arrangement), Terao conjectured thirty years ago that its freeness depends only on its combinatorics. A lot of efforts were done to prove it but at this time it is only proved up to 12 lines. If one wants to find a counter example to this conjecture a new family of curves arises naturally, and this justifies their study: the nearly free curves introduced and studied by Dimca and Sticlaru.

I will show that the associated bundle to a nearly free curve possesses a minimal non zero section that vanishes on one single point P , called jumping point, and I'll give a precise description of the behaviour of P . In particular we will see on detailed examples that the position of P relatively to its nearly free arrangement of lines is not a combinatorial invariant. This work is a collaboration with Simone Marchesi from Campinas University (Brasil).

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