

SOME ANALOGS OF ZARISKI'S THEOREM ON NODAL LINE ARRANGEMENTS

A. D. R. Choudary^{*}, A. Dimca^{**}, Ş. Papadima^{***}

^{*} Director General,
School of Mathematical Sciences,
GC University, Lahore, Pakistan.

choudary@cwu.edu

^{**} Department of Mathematics,
University of Nice,
Nice, France.

dimca@math.unice.fr

^{***} Mathematical Institute of Romania Academy,
Calea Grivitei No. 21,
Bucharest, Romania

stefan.papadima@imar.ro

ABSTRACT

For line arrangements in P^2 with nice combinatorics (in particular, for those which are nodal away the line at infinity), we prove that the combinatorics contains the same information as the fundamental group together with the meridional basis of the abelianization. We consider higher dimensional analogs of the above situation. For these analogs, we give purely combinatorial complete descriptions of the following topological invariants (over an arbitrary field): the twisted homology of the complement, with arbitrary rank one coefficients; the homology of the associated Milnor fiber and Alexander cover, including monodromy actions; the coinvariants of the first higher non-trivial homotopy group of the Alexander cover, with the induced monodromy action.