

# ON THE INTERSECTION OF RATIONAL TRANSVERSAL SUBTORI

SHAHEEN NAZIR

ABSTRACT. We show that under a suitable transversality condition, the intersection of two rational subtori in an algebraic torus  $(\mathbb{C}^*)^n$  is a finite group which can be determined using the torsion part of some associated lattice. Applications are given to the study of characteristic varieties of smooth complex algebraic varieties. As an example we discuss A. Suciú's line arrangement, the so-called deleted  $B_3$ -arrangement.

---

2000 *Mathematics Subject Classification*. Primary 14C21, 14F99, 32S22 ; Secondary 14E05, 14H50.

*Key words and phrases*. local system, constructible sheaf, twisted cohomology, characteristic variety, pencil of plane curves.