

Title: Foliations by curves of low degree on \mathbb{P}^3 with curves as singularities,

Mauricio Corrêa–Università di Bari

We study foliations by curves on the three-dimensional projective space with no isolated singularities, which is equivalent to assuming that the conormal sheaf is locally free. We provide a classification of the topological and algebraic invariants of the conormal sheaves and singular schemes for such foliations by curves, up to degree 3. In particular, we prove that foliations by curves of degree 1 or 2 are contained in a pencil of planes or are Legendrian, and are given by the complete intersection of two codimension one distributions. Furthermore, we prove that the conormal sheaf of a foliation by curves of degree 3 with reduced singular scheme either splits as a sum of line bundles or is an instanton bundle. This is a joint work with Marcos Jardim and Simone Marchesi.