

On a characterization of two-dimensional distributions on $\mathbb{P}^n$ with split tangent sheaf

Raphael Constant da Costa¹

¹ Universidade do Estado do Rio de Janeiro (UERJ)

A theorem due to Giraldo and Pan–Collantes states that the tangent sheaf of a codimension-one distribution on $\mathbb{P}^3$ splits if and only if its singular scheme is an arithmetically Cohen–Macaulay curve. More generally, we provide an alternative description of two-dimensional distributions on $\mathbb{P}^n$, $n \geq 3$, whose tangent sheaf splits. We also discuss a related division result concerning polynomial differential forms and vector fields.