Simple derivations and foliations with one singularity

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A number of results, in recent years, have been concerned with foliations with one singularity on the complex projective plane. Thus, [1] presents a classification of foliations of degree 2 with one singularity, while [2, Theorem 1, p. 192] introduces a family of foliations with one singularity of algebraic multiplicity one. In this talk I will present a new family of foliations of degree \( d \geq 4 \) whose unique singularity has multiplicity \( d - 1 \). The generic foliations in this family have trivial isotropy groups and a unique invariant algebraic curve, thus giving rise to a new family of simple derivations of the affine plane.

References
