

# Singular foliations, asymptotic analysis and integrability

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In this talk, we will discuss some results concerning the dynamics of a holomorphic vector field near a singular set. First we will consider a singular point in dimension two and the behavior of its orbits in some sectors obtained from a transverse section to a separatrix. We combine some holomorphic foliations holonomy techniques together with classic asymptotic analysis. Next, we will explore some aspects of the problem of integrability of vector fields in dimension three, from a point of view of asymptotic and summability analysis.