

Algebroid Functions with Essential Singularities

Abstract In this lecture, it is considered the question of analyzing the behaviour of an algebroid function near a singularity. This is an old question, going back to Puiseux, Cramer and others. Here consider the problem of estimating the length of the algebraic cycles of the branches of an algebroid function at an algebraic singularity in terms of the data relative to the coefficients $A_k(z)$ of the equation defining the algebroid function. A further question considered is the value distribution of an algebroid function near an essential singularity, we prove in this direction the corresponding result to the Casoratti-Weierstrass Theorem. The final aim should be the Great Picard Theorem for algebroid functions.