Primitives of algebraic functions

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Résumé

Given an algebraic function , when can a primitive of it be constructed by means of algebraic oper-ations and taking primitives of some other given algebraic functions ? When the only primitive allowed is the logarithm, this is the question of elementary integrability and a decision procedure has been given by Risch. We will present a general decision procedure for deciding this question, based on a new result of Ax-Schanuel type for primitives of differential forms on curves.

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