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Lourdes Juan* (lourdes.juan@ttu.edu), Department of Mathematics and Statistics, Texas Tech University, Box 1042, Lubbock, TX 79411. *Some remarks on the integration of algebraic functions.*

Bronstein developed an algorithm to compute the logarithmic part of an integral of a function that lies in a tower of transcendental elementary extensions. However, computing the logarithmic part in an algebraic extension has remained difficult. In his PhD dissertation, Brian Miller developed a method to compute the logarithmic part when the function lies in a tower of transcendental elementary extensions followed by an algebraic extension. The method uses Grobner bases and primary decomposition. In this talk we will bring insight into the algebraic justification of the method and discuss some open questions. (Received February 11, 2014)