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## **Integration on Darbouxian foliations**

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Consider a Darbouxian function  $f = F_0 + \sum \lambda_i \ln F_i$  with  $F_i$  rational functions in two variables, and the foliation of curves  $C_h = \{f(x, y) = h\}$ . We consider the problem of symbolic integration of a rational function G along  $C_h$ . If the monodromy of the integral satisfies a differential equation in h, then it is linear with constant coefficients, and the integral can be expressed in terms of Liouvillian functions restricted to  $C_h$ . Such situation is exceptional, but is however more general than elementary integration. We present an algorithm to test the existence of such differential equation and return the Liouvillian expression of the integral if it exists.

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