Tristan Collins and Malabika Pramanik* (malabika@math.ubc.ca), 1984 Mathematics Road, University of British Columbia, Vancouver, BC V6T 1Z2, Canada. Critical integrability exponent associated to multivariate polynomials.

We discuss local integrability issues (near the origin) for integrands of the form $|f|^{-\delta}$, where f is a multivariate polynomial vanishing at the origin. Using a resolution of singularities algorithm we obtain a description of the critical integrability exponent δ in terms of Newton data associated to f. (Received September 14, 2008)