1023-26-184   **George A Anastassiou*** (`ganastss@memphis.edu`), Department of Mathematical Sciences, University of Memphis, Memphis, TN TN 38152. *Multivariate Euler Type Identity and Optimal Multivariate Ostrowski Type Inequalities.* Preliminary report.

We develop and establish a general multivariate Euler type identity.Using it we derive general tight multivariate high order Ostrowski type inequalities for the estimate on the error of a multivariate function f evaluated at a point from its average.The estimates are involving only the single partial derivatives of f and are with respect to Lp norm,p greater equal 1 and supnorm.We give specific applications of our results to the multivariate trapezoid and midpoint rules for functions f differentiable up to order 6.We prove sharpness of our inequalities for differentiation orders m equal 1,2,4 and with respect to supnorm. (Received August 21, 2006)