1077-35-2535 **Sarah King*** (saking@ncsu.edu). *A Multi-Moment CIP Method for Hyperbolic Equations.*

We propose a numerical method for solving hyperbolic equations based on the method of characteristics and multi-moment approximation of functions. Exact update formulas are derived for for the solution and solution derivative with variable wave speed using the method of characteristics. Then an extension of the Constrained Interpolation Profile (CIP) method is used for time integration. The CIP method is numerically stable and for certain vector fields that develop singularities in the solution, the method captures the singularity. We will apply the method to the transport and advection equations and provide extensions to higher dimensions. (Received September 22, 2011)