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**N. S. Hoang\*** ([nhoang@westga.edu](mailto:nhoang@westga.edu)), 1601 Maple Street, Carrollton, GA 30118. *On node distributions for interpolation and spectral methods.*

A scaled Chebyshev node distribution is studied in this paper. It is proved that the node distribution is optimal for interpolation in  $C_M^{s+1}[-1, 1]$ , the set of  $(s + 1)$ -time differentiable functions whose  $(s + 1)$ -th derivatives are bounded by a constant  $M > 0$ . Node distributions for computing spectral differentiation matrices and integration matrices are proposed and studied. Numerical experiments show that the proposed node distributions can yield results with higher accuracy than the most commonly used Chebyshev-Gauss-Lobatto node distribution. (Received August 13, 2014)