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Michael C Haslam* (mchaslam@mathstat.yorku.ca), Department of Mathematics and Statistics, York University, 4700 Keele St., Toronto, Ontario M3J 1P3. *High Order Solvers for Large Driven Wire Arrays.*

We discuss our recent work concerning the evaluation of the current induced on an arbitrarily large array of non-intersecting wire segments with a current source located on an array element. In this work the source model is taken to be the widely-used delta-gap generator in which a finite voltage is maintained across an infinitesimally small distance. This idealized driving source produces a delta function in the source terms of the Pocklington integro-differential equation for the current; specialized treatment of these terms is required to maintain the high-order convergence of our algorithms. We illustrate the performance of our solvers by considering an array of several hundred wire elements. Near and far-field results are efficiently extracted along with other quantities of interest such as the antenna gain. With Oscar Bruno, Caltech. (Received September 14, 2010)