1147-45-913   **Camille Carvalho*** (`ccarvalho3@ucmerced.edu`), 5200, N Lake Road, Merced, CA 95348, **Shilpa Khatri**, CA , and **Arnold D Kim**, CA. *Asymptotic approximations of near fields in scattering problems.*

Accurate evaluations of near fields can be crucial in a wide range of applications, from the modeling of micro-organisms swimming in Stokes flow to the light enhancement in plasmonic structures. Plasmonic structures are in particular made of dielectrics, and metals (or metamaterials) for which the electromagnetic properties enable the propagation of highly-oscillating (sub-wavelength) surface waves at the interface of the two materials. Boundary integral equation methods can approximate the solution of such problems with high-accuracy using Nystöm methods, however this accuracy is lost for evaluation points close (but not on) the boundary. In this presentation we present some techniques based on asymptotic approximations to address the close evaluation problem for scattering problems. (Received January 29, 2019)

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