Analytical solution of sheaths for cylindrical and spherical objects. NOAH HERSHKOWITZ, University of Wisconsin - Madison, LUTFI OKSUZ, Suleyman Demirel Universitesi - Isparta, Turkey — A novel exact analytical solution method is given in order to solve the space charge limited current for Poisson eqution for cylindrical and spherical geometries. Using this method Poisson equation is solved for different Cartesian, cylindrical and spherical sheaths for Child Langmuir sheath problem. The ion collections, developed for cylindrical, spherical and planar geometries showed spherical probe can collect much more current than the other geometries. The solutions are examined for collisional and collisionless cases. Analytical solutions are compared with the experimental results.

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