Electrostatics of unequal sized conducting spheres

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***Abstract*—We study the electrostatic interaction of two unequal sized conducting spheres that can be used to model the interaction of particles and droplets in a variety of atmospheric phenomena. We present closed-form expressions for the capacitance coefficients of the two spheres using the special q-digamma function by first expressing the capacitance coefficients in terms of a Lambert series [1]. The closed-form expressions allow us to examine the difficult to analyze close approach of the two spheres to any arbitrary order in the sphere surface-to-surface separation. As expected, we verify that even two positively charged spheres almost always attract each other at sufficiently small separation [2].**

REFERENCES

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