

Abstract Submitted
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Electrostatics and Riemann Surfaces SPENCER TAMAGNI,
COSTAS EFTHIMIOU, Univ of Central Florida — We explain some basic connections between standard techniques in electrostatics and the theory of Riemann surfaces. These results are well-understood in algebraic geometry, but are not well-known by physicists in general. We illustrate this by using simple, complex-analytic techniques to find electric fields on the sphere and torus, which gives an illuminating way to visualize elliptic functions when the argument is complex. This illustrates the deep and far-reaching connection between geometry and physics at an easily understood, elementary level.

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