Meet Maxwell's Equations

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Outline

- Coulomb's Law, Gauss' Law, Newton's Theorem
- Potentials for large $|x|$. Multipoles
- A cancellation property of multipoles
- Capacitory potential
- Perfect conductors and surface charges. Capacity.
- Induced charge on grounded conductors
    - A bound on induced charge
- Two charged conductors
    - A qualitative question
- Limiting amplitude principal for periodic sources
- Nonexistence of perfect shadows

Course Materials. The first topic is part of Meet the Laplacian.

The next topics are inspired by my 1974 Tulane lecture, clickable in Encounters materials.

A **substantially** fleshed out version of all but the last two topics is in the handout `MeetElectrostatics.pdf` among Encounters materials.

The last two topics are from the first Tulane lecture. It is an introduction to my 1972 Indiana Journal paper with M. Taylor.