

Method of Images

A method of solving electrostatics problems that involves the conversion of an electric field into another equivalent field that is simpler to calculate. This method is particularly useful for dealing with problems involving point charges near conductors: it is possible in certain cases to replace the conductors by one or more point charges in such a way that the conductor surfaces are replaced by equipotential surfaces at the same potentials. Since the boundary conditions are then satisfied, the electric field due to the combination of the original point charges and the “image” charges is the correct one for the region outside the conductors.

The method essentially amounts to using the electric field solution for a certain combination of charges to solve another problem that is too difficult to solve from first principles.