Application of Coulomb's Law on Electric Currents Explain Several Electromagnetic Phenomena

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The competence of Coulomb's Law has historically been assumed to be restricted to pure electrostatics. As soon as electric charges are being studied in motion, a new set of laws have been introduced in order to explain the electromagnetic forces that are impelled by the motion. Among those is Neumann's law of induction, Lenz' law, Grassmann's force law, Lorentz' force law, and Ampère's force law. Light, in turn, is explained to be regarded as simultaneously particles and waves, though the origin is predominantly electric. Beginning in 1997, research results have become public that succeed in showing that the basic force behind all cases involving electricity can be derived from Coulomb's law. The so-called Ampère forces between collinear currents, as in Ampère's bridge and in exploding wires have been explained to be due to Coulomb's law, provided the propagation delay due to the motion of charges is being taken into account correctly. The Lorentz force law fails in this case. Also electromagnetic induction can be explained using Coulomb's law, whereas Neumann's induction law fails. Light can be explained using Coulomb's law on the orbit electrons in the atoms involved in excitation and de-excitation of states, something that already Compton predicted but did not prove. Bohr, on the contrary denied this, but did not convincingly show why. The appearance of light at an atom hit by electromagnetic radiation can be shown to constitute a case of electromagnetic induction. The conclusion is that Coulomb's law is the only necessary force law within electromagnetism.