Electromagnetic wave

Contributed by: William R. Smythe

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A disturbance, produced by the acceleration or oscillation of an electric charge, which has the characteristic time and spatial relations associated with progressive wave motion. A system of electric and magnetic fields moves outward from a region where electric charges are accelerated, such as an oscillating circuit or the target of an x-ray tube. The wide wavelength range over which such waves are observed is shown by the electromagnetic spectrum. The term electric wave, or Hertzian wave, is often applied to electromagnetic waves in the radar and radio range. Electromagnetic waves may be confined in tubes, such as wave guides, or guided by transmission lines. They were predicted by J. C. Maxwell in 1864 and verified experimentally by H. Hertz in 1887. *See also:* ELECTROMAGNETIC RADIATION; MAXWELL'S EQUATIONS.

William R. Smythe

Bibliography

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Additional Readings

E. L. Nefyodov and S. M. Smolskiy, *Electromagnetic Fields and Waves*, Springer, 2019