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When charges move in a conducting wire and produce a current I, the magnetic field at any point P due to the current can be calculated by adding up the magnetic field contributions, dB, from small segments of the wire GChapter 9 Sources of Magnetic FieldsMagnetic fields surround electric currents, so we surmise that circulating electic currents in the Earth's molten metalic core are the origin of the magnetic field.A current loop gives a field similar to that of the earth. The magnetic field magnitude measured at the surface of the Earth is about half a Gauss and dips toward the Earth in the northern hemisphere.Magnetic Field of the Earth - Georgia State UniversityA magnetic field is a vector field that describes the magnetic influence on moving electric charges, electric currents,: ch1 and magnetized materials. 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**Chapter 28 – Sources of Magnetic Field**

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