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The History of Electron Spin

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A look back at the unsolved problems like para-, dia- and ferro magnetism, the doublet structure of the alkali spectra and the anomalous Zeeman effect that led to the introduction of the electron having an intrinsic spin will be given. Then a historical review of the work of Compton, Pauli, Goudsmit, and Uhlenbeck on electron spin follows. The first published work on electron spin was that of Compton in a paper entitled "The Magnetic Electron" in the Journal of the Franklin Institute in 1921. He introduced the idea of the spinning electron and its associate spin magnetic moment to explain para-, dia- and ferro magnetism and carried out experiments to support his idea. This work was unknown to Goudsmit and Uhlenbeck when they wrote a paper in 1925 on electron spin to explain the doublet nature of alkali spectra. The role of Pauli in the introduction of the idea of a spinning electron is described.