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The Missing Part in the Story of Spin: What is the Spin Content of Stern-Gerlach? JEAN-FRANCOIS S. VAN HUELE, Brigham Young University — Explaining the complex structure of atomic spectra was a determining factor in the development of the old quantum theory and it contributed significantly to the invention of quantum mechanics in the 1920s. Eventually it also led to the introduction of an additional degree of freedom for the electron and to the spin model of Goudsmit and Uhlenbeck. All along, information on the Stern-Gerlach effect, which is widely interpreted today as a manifestation of spin, was available. It did not seem to influence the invention or the acceptance of spin. We examine the connection between spin and Stern-Gerlach and review the lack of mutual influence in the publication record. We conclude by suggesting possible reasons for the absence of the Stern-Gerlach effect in the story of spin.

Jean-Francois S. Van Huele
Brigham Young University

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