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The Stern-Gerlach Effect and its Destiny JEAN-FRANCOIS S. VAN HUELE, BAILEY C. HSU, Brigham Young University, JARED R. STENSON, Oregon State University — The experiments performed by Otto Stern and Walther Gerlach in Frankfurt am Main in 1921-1922 represent a milestone in the development of modern physics. The significance of their result, commonly known as the Stern-Gerlach effect can actually be argued from a variety of viewpoints, including the beginnings of molecular beams, the manifestation of spin, and the study of the classical-quantum transition with the appearance of space quantization, entanglement, and the measurement problem. The theoretical description of the original Stern-Gerlach effect and of its extensions has led to a growing body of literature. We review the coverage of the different aspects of Stern-Gerlach from the original papers by Stern, by Stern and Gerlach and by Gerlach to the current attempts to give a completely satisfactory description of the underlying dynamics. In conclusion we argue that the story of the Stern-Gerlach effect, i.e., the evolution of its exemplary status is far from over.

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