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**Van Vleck from Spectroscopy to Susceptibilities: Kuhn Losses Regained**

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As a young assistant professor in Minneapolis, John H. Van Vleck spent much of his time between 1923 and 1926 writing a book-length Bulletin for the National Research Council. As its title, Quantum Principles and Line Spectra, suggests, the book focuses almost exclusively on spectroscopy, the core pursuit of the old quantum theory. By the time it finally appeared in 1926, the old quantum theory had given way to the new quantum mechanics. Van Vleck soon realized that matrix mechanics reinstated some well-confirmed results of the classical theory of susceptibilities that had been lost in the old quantum theory. In the history and philosophy of science literature, such losses are called 'Kuhn losses'. Using mathematical techniques similar to those presented in his NRC Bulletin, Van Vleck started to work on the theory of susceptibilities. In 1929, now a full professor in Madison, he began writing another book, which appeared in 1932 and has become a classic: The Theory of Electric and Magnetic Susceptibilities. In this talk I follow Van Vleck's trajectory from spectroscopy to susceptibilities and examine how his two books reflect and helped shape research traditions. The talk is based on joint work with Charles Midwinter.