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Jo van Leeuwen, the other physicist behind the Bohr-Van Leeuwen theorem

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The first four women to obtain a PhD in physics at Leiden University all graduated with Nobel laureate Hendrik Lorentz. Hendrika Johanna (Jo) van Leeuwen (1887–1974) was one of them. Her thesis elucidates that magnetism is exclusively a quantum phenomenon –a result that was independently also obtained by Niels Bohr and that is now commonly known as the Bohr–van Leeuwen theorem. From 1920 onwards Van Leeuwen worked at the Technische Hoogeschool in Delft (now Delft University of Technology). Initially serving as an assistant, she was appointed as a reader in theoretical and applied physics in 1947, becoming the first female reader in Delft. This talk outlines Van Leeuwen’s work and early contributions to the quantum theory of magnetism –putting it in the broader context of quantum developments and of women in physics in the Netherlands / Western Europe during the (early) 20th century.

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