



Contribution ID: 278

Type: Talk

[72] Quantum mechanics in a course on “Higher algebra”: Wolfgang Pauli, Emil Artin, and the representation theory of semi-simple systems

Wednesday 11 September 2024 15:00 (30 minutes)

Bartel Leendert van der Waerden's (1903–1996) 1932 book *Die gruppentheoretische Methode in der Quantenmechanik* (translated as *Group theory and quantum mechanics*) benefited from his contacts with Werner Heisenberg (1901–1976) at the University of Leipzig and documents the early collaboration between quantum mechanics and the –then– “modern” algebra.

However, personal relationships had already played an important role before: In the winter semester of 1927/28, Wolfgang Pauli (1900–1958) attended a lecture course on “Ausgewählte Kapitel der höheren Algebra” (= “Selected chapters of higher algebra”) which Emil Artin (1898–1962) gave at the University of Hamburg and in which he dealt with representation theory.

That Artin cared about Pauli's need to apply this theory to quantum mechanics is shown by studying a set of notes which Pauli took during the lecture course and which he later referred to several times.

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Session Classification: History and Philosophy of Physics

Track Classification: History and Philosophy of Physics