



ACADIA
UNIVERSITY

DEPARTMENT OF
PHYSICS

Physics Seminar: Matrix Mechanics without Matrices?

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Friday, January 30 at 12:30 pm
Huggins Science Hall 206 (HSH 206)

In 1925 Werner Heisenberg published a paper (known as the “*Umdeutungs* paper”) that introduced *matrix mechanics* and is generally considered a major step towards a modern formulation of quantum theory. History-of-science folklore has it that the inventor of matrix mechanics knew nothing of matrices when writing the paper, which raises the question: how does one invent matrix mechanics without knowing about matrices? And isn’t matrix algebra part of every physicist’s undergraduate education as a matter of course? To answer these questions, we will retrace Heisenberg’s reasoning and take a look at the history of matrix theory and its adoption in education.

Holger Teismann came to Canada almost 30 years ago as a postdoc at the University of Victoria. He has been teaching mathematics ever since and still thoroughly enjoys doing it. His research interests include partial differential equations and their applications, as well as quantum control and information theory.