

# A fruitful marriage – when maths meets physics

*Friedrich W. Hehl*

**Mathematics Meets Physics:  
A contribution to their interaction  
in the 19th and the first half of the  
20th century**

K.-H. Schlote and M. Schneider (eds.)  
2011. 500 pages, Euro 38.–  
Verlag Harri Deutsch,  
Frankfurt am Main

The beneficial role of mathematics in physics cannot be overestimated. This is no new finding as already Galilei, Newton and their contemporaries were well aware of this crucial and mutually inspiring relationship.

Especially in Germany of the 19th and early 20th century there had been some remarkable advances in physics due to its mathematical formulation. This was discussed on an international meeting in Leipzig on “Mathematics Meets Physics”. Originally conceived as an investigation of the Saxon Academy of the Sciences at Leipzig into the interaction of both fields at the universities of Halle-Wittenberg, Jena, and

Leipzig, this research was put into a wider context during that meeting and internationally well-known scholars gave lectures that complemented the more local, Saxon investigations.

As a result a collection of essays (nine of them in English, five in German) is now available as book “Mathematics Meets Physics” and illuminates different aspects of the interaction between mathematics and physics from around 1800 to 1950. In this way an interesting, many faceted picture of the relation between the two fields emerged, exemplified at the level of universities, like the above mentioned; at persons, like Faraday/Maxwell, Jordan, W. Lenz, von Mises, Poincaré, Veblen/Princeton, Weyl; and at physical concepts, like angular momentum, Hilbert space and quantum mechanics, distributions and quantum physics, quantum wave equations and relativity. Moreover, reflections on the interplay between mathemat-

ics and physics, extending over the past two centuries, were formulated and one study provided a historical and epistemological outlook on the mathematics and physics interface.

“Who brings a lot, brings something that will pass: And everyone goes home contentedly” (Goethe). A statement that clearly also holds for this essay collection. There are numerous valuable considerations on the topic that make it an interesting reading. This book shouldn't be missing in any mathematics and physics library, but even better, the moderate prize makes it also highly interesting for individuals. “Mathematics meets Physics” can be recommended wholeheartedly to everyone interested in why we know what we know in theoretical physics.

*Friedrich W. Hehl*  
(Cologne, Germany  
and Columbia, MI, USA)

*Guido Fuchs*  
(AdP)