

Editorial: Commemorating Albert Einstein

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Editorial

Commemorating Albert Einstein

Dear reader

The year 1905, for every physicist of high significance, implies for *Annalen der Physik* – the journal in which most of Einstein's seminal ideas were published – the definite obligation to celebrate in 2005, one hundred years later, his work and his impact on physics. Einstein's first *Annalen* paper [AdP **4**, 513–523 (1901)], received on 16 December 1900 and published on 1 March 1901, was devoted to the nature of molecular forces: *Folgerungen aus den Capillaritätserscheinungen*. His last *Annalen* paper [AdP **69**, 436–438 (1922)], received on 25 September 1922 and published on 19 December 1922, was a critical comment entitled *Bemerkung zu der Franz Seletyschen Arbeit „Beiträge zum kosmologischen System“*. A total of 49 contributions by Albert Einstein, on 471 pages, including addenda, errata and comments, were published in *Annalen der Physik*.

In this triple issue, we commemorate Einstein's impact on physics with nine articles, written by eminent colleagues who relate his contributions to the forefront of today's research. We start with articles on the *photon* and on *Brownian motion*, including most recent technological developments, turn then to *special relativity* with articles on its experimental verification, on a new pedagogical introduction to it, and on a somewhat speculative derivation of the Poincaré group (inhomogeneous Lorentz group). Subsequently, Einstein's *gravitational* theory and the cosmological constant are surveyed, at last the much discussed *entanglement* of quantum systems addressed.

As a special service to the scientific community, *Annalen der Physik* presents, additionally, an 'Einstein Supplement' of about 550 pages, free of charge for our subscribers, and also available in the form of a book (Einstein's *Annalen Papers*, WILEY-VCH, Weinheim, 2005, ISBN 3-527-40564-X): This Supplement, compiled by Jürgen Renn (Max Planck Institute for the History of Science, Berlin) as guest editor, features four articles which examine Einstein's contributions from an historical point of view as well as facsimiles of all of Einstein's *Annalen* papers. The historical papers are on Einstein and the quantum hypothesis (D. C. Cassidy), on Brownian motion (J. Renn), on optics and electrodynamics (R. Rynasiewicz), and on Einstein's first systematic exposition of general relativity (M. Janssen).

Both, this Special Issue as well as the Supplement are being delivered to the Berlin conference which opens on 4 March 2005. With this meeting, the Deutsche Physikalische Gesellschaft, together with all its divisions and with the Astronomische Gesellschaft, is celebrating the World Year / International Year of Physics 2005 – the Einstein Year.

On such an occasion, it appears worthwhile to briefly recall the long and grand history of this journal. The story started in 1790 when Friedrich Albert Carl Gren founded the 'Journal der Physik' (1790–1794), continued as 'Neues Journal der Physik' until 1797. Two years later, in 1799, the 'Journal' was continued under the name 'Annalen der Physik' with Ludwig Wilhelm Gilbert as its editor, and 60 volumes were published until 1818. The name was changed to 'Annalen der Physik und der physikalischen Chemie' (1819–1824, vols. 61–76 of the complete series; the counting starts in 1799), then to 'Annalen der Physik und Chemie' (1824–1877, vols. 77–236, edited by Johann Christian Poggendorff), and finally back to its original and present name (new '3rd series', 1877–1899, vols. 237–305, edited by Gustav Wiedemann and, from 1892 on, by Gustav and Eilhard Wiedemann). Starting in 1877, *Annalen der Physik* was published

in cooperation with the Physikalische Gesellschaft zu Berlin, from 1899 with the Deutsche Physikalische Gesellschaft (until 1998). The 4th series covers the years 1900–1906 (vols. 306–326, edited by Paul Drude) and 1907–1928 (vols. 327–392, edited by Wilhelm Wien and Max Planck). – This year, 2005, *Annalen der Physik* is presenting volume 14 of the 8th series, that is, volume 517 of the complete series.

We are most grateful to the authors of this Special Issue for supporting the idea of this project with their notable contributions. The encouragement and the help by several colleagues are thankfully acknowledged, in particular, by Gert-Ludwig Ingold (Augsburg) and Ingo Peschel (Berlin). Finally, this project – as well as the Supplement – would not have been completed in time without the efforts of the staff of WILEY-VCH in Berlin, in particular, Alexander Grossmann, André Danelius, and Vera Palmer. The technical assistance of Katharina Steingraeber and her team has been most helpful.

With best regards,

Ulrich Eckern (Augsburg) & Friedrich W. Hehl (Köln)

PS: For further information, see also <http://www.physik.uni-augsburg.de/annalen/history/>.