

Neumann, Olaf (ed.)

[Riemann, Bernhard; Minkowski, Hermann; Hilbert, David; Neumann, Olaf; Dedekind, Richard]

Bernhard Riemann/Hermann Minkowski, Riemannian spaces and Minkowski world. With B. Riemann's habilitation lecture, Göttingen 1854, and D. Hilbert's commemorative address for H. Minkowski, Göttingen 1909. With original papers of B. Riemann, H. Minkowski, R. Dedekind, D. Hilbert, and O. Neumann's essay "Riemann, Minkowski, and the notion of space". (Bernhard Riemann/Hermann Minkowski, Riemannsche Räume und Minkowski-Welt. Mit B. Riemanns Habilitationsvortrag, Göttingen 1854, und D. Hilberts Gedächtnisrede auf H. Minkowski, Göttingen 1909. Mit Originalarbeiten von B. Riemann, H. Minkowski, R. Dedekind, D. Hilbert und dem von O. Neumann verfassten Essay "Riemann, Minkowski und der Begriff 'Raum'".) (German, French, Latin) [Zbl 1285.01002](#)
EAGLE 14. EAGLE-Archiv. Leipzig: Edition am Gutenbergplatz Leipzig (EAGLE) (ISBN 978-3-937219-14-1/pbk). 179 p. (2012).

The book is a new edition of several documents included in the first volume of the Teubner-Archiv zur Mathematik [*C. F. Gauß* et al., Gaußsche Flächentheorie, Riemannsche Räume und Minkowski-Welt. Hrsg. und mit Anh. versehen von J. Böhm und H. Reichardt. Leipzig: BSB B. G. Teubner Verlagsgesellschaft (1984; [Zbl 0565.53001](#))]. These documents are the fundamental and programmatic lectures of *B. Riemann* ["Ueber die Hypothesen, welche der Geometrie zu Grunde liegen", Göttingen Abhandl. XIII. 1868. 1–20 (1868; [JFM 01.0022.02](#))] and *H. Minkowski* ["Raum und Zeit", Math. naturw. Bl. 6. 99–102 (1909; [JFM 40.0094.01](#))] Riemann's Latin treatise "Commentatio mathematica,..." that he sent to the Parisian Academy answering a prize competition and O. Neumann's translation of that treatise into German. They marked important steps in the history of differential geometry and opened up new stages of development. These documents are supplemented by H. Weber's comment on the "Commentatio mathematica", Riemann's biography written by R. Dedekind in 1876, an obituary for Minkowski written by *D. Hilbert* [Göttingen Nachr., Geschäftl. Mitt. 1909, 72–101 (1909; [JFM 40.0036.05](#))], and a thorough essay by O. Neumann. The latter one introduces the reader into basic concepts of these treatises and conveys to him a good impression of the important role that the two lectures played in the history of geometry by opening up new fields of development as well as of Riemann's and Minkowski's personalities.

Reviewer: [Karl-Heinz Schlote \(Altenburg\)](#)

MSC:

- [01-02](#) Research exposition (monographs, survey articles) pertaining to history and biography
- [01A55](#) History of mathematics in the 19th century
- [01A70](#) Biographies, obituaries, personalia, bibliographies
- [01A75](#) Collected or selected works; reprintings or translations of classics
- [53-03](#) History of differential geometry
- [83-03](#) History of relativity and gravitational theory

Keywords:

Bernhard Riemann; Riemann space; Hermann Minkowski; Minkowski space; differential geometry; space-time continuum; special theory of relativity

Biographic references:

[Minkowski, Hermann](#); [Riemann, Bernhard](#)