

Constance Reid **Courant** in Göttingen and New York The Story of an Improbable Mathematician



36 photographs. IV, 332 pages. 1976.
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There was a golden time when the small German town of Göttingen was for mathematicians what Paris was for artists, and nineteen-year-old Richard Courant fell immediately under its spell. He became a well-known mathematician, teacher, writer and editor, organizer and administrator; but everything he did professionally was always influenced by his youthful experience in Göttingen. He also put his own highly individual stamp on the scientific tradition which it represented for him. When, in 1933, he was dismissed by the Nazis from his position as director of the internationally famous Mathematics Institute of Göttingen, he emigrated to the United States and devoted himself to creating in that country a stimulating scientific center such as the one he had known in his youth in Göttingen. Today, the Courant Institute of Mathematical Sciences in New York City is a visible symbol of the success of his efforts.

Constance Reid, the author of a well received biography of Hilbert, had a number of conversations with Richard Courant, then Professor Emeritus at the Mathematics Department of New York University, prior to his death in 1972. These conversations, his letters, diaries, and testimonies from many of Courant's friends and colleagues form the basis for **Courant In Göttingen and New York**.

Springer Books by Courant:

R. Courant: **Dirichlet's Principle, Conformal Mapping, and Minimal Surfaces**
With an Appendix by M. Schiffer
Reprint of the 1st Edition, Interscience Publishers New York 1950

R. Courant: **Vorlesungen über Differential- und Integralrechnung**
Band 1: Funktionen einer Veränderlichen
Band 2: Funktionen mehrerer Veränderlichen

R. Courant, K.O. Friedrichs: **Supersonic Flow and Shock Waves**
(Applied Mathematical Sciences, Vol. 21)

R. Courant, D. Hilbert: **Methoden der Mathematischen Physik 1**
(Heidelberger Taschenbücher, Band 30)

R. Courant, D. Hilbert: **Methoden der Mathematischen Physik 2**
(Heidelberger Taschenbücher, Band 31)

R. Courant, H. Robbins: **Was ist Mathematik?**



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W. Thirring

Lehrbuch der Mathematischen Physik

Band 1

Klassische Dynamische Systeme

58 Abb. XIII, 255 Seiten. 1977.
Geheftet S 250,-; DM 36,-
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„... *Thirring* weicht von der traditionellen Struktur der Lehrbücher für theoretische Physik ab und macht den Leser von Anfang an mit Methoden und Problematik der theoretischen Physik vertraut, wie sie sich dem heute in der Forschung tätigen Physiker stellen. Daß eine derartige Aufbereitung des Stoffes auch den Studierenden zugänglich gemacht werden kann, hat *Walter Thirring* hier bewiesen. Sicher wird dieses Lehrbuch der mathematischen Physik für längere Zeit ein Standardwerk sein...“

Prof. Dr. J. Wess, Institut für Theoretische Physik, Universität Karlsruhe

Band 2 *Soeben erschienen*

Klassische Feldtheorie

70 Abb. X, 258 Seiten. 1978.
Geheftet S 250,-; DM 36,-
ISBN 3-211-81475-2

Die Algebra der Differentialformen samt ihren äußeren und Koableitungen bilden die Elemente, aus denen die klassische Feldtheorie aufgebaut ist. Daher werden zu-

nächst Differentialgleichungen studiert, welche die äußere und Koableitung einer p-Form vorgeben. Die Maxwell'schen Gleichungen zeigen dann die physikalische Bedeutung der allgemeinen Lösung des Anfangswertproblems - zunächst für eine beliebige Ladungsverteilung, dann auf eine Punktladung spezialisiert. Als nächstes wird die Veränderung der Struktur des Anfangswertproblems durch die Anwesenheit von Leitern untersucht und an typischen Beispielen illustriert.

Die Verwendung von Differentialformen in den Einsteinschen Gleichungen betont ihre Analogie zu den Maxwell'schen Gleichungen und vereinfacht die praktische Rechnung. Strenge Lösungen für Felder mit besonderen Symmetrien lassen sich so ohne großen Aufwand ableiten. Schließlich wird als Kostprobe neuerer Erkenntnisse ein Satz über die Bildung von Singularitäten abgeleitet.

In Vorbereitung:

Band 3
Quantentheorie von Atomen und Molekülen

Band 4
Quantentheorie großer Systeme



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INSTRUCTIONS TO AUTHORS

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Please include a "Note for the Printer" explaining markings used. See suggestion overleaf.

To speed up publication, authors will receive **only one set of proofs**: provisionally numbered page proofs. Authors are requested to **correct typographical errors only**; they will be charged for corrections involving changes, additions or deletions to the original manuscript.

Diagrams should be submitted on separate sheets, not included in the text. They should be drawn in Indian ink in clean uniform lines, the whole about twice the size of the finished illustration. Inscriptions should allow for the figure 1, for example, to be about 2 mm high in the final version (i.e. 4 mm for reduction $\times \frac{1}{2}$). The author should mark in the margin of the manuscript where diagrams may be inserted.

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Please give on the first page of the manuscript a **running head** (condensed title), which should not exceed 70 letters including spaces.

References to the literature should be listed at the end of the manuscript. The following information should be provided for **journal articles**: names and initials of all authors, name of the journal, volume, first and last page numbers and year of publication. References to **books** should include name(s) of author(s), full title, edition, place of publication, publisher and year of publication.

Examples

Bombieri, E., Giusti, E.: *Inventiones math.* **15**, 24–46 (1971)

Tate, J.T.: *p*-Divisible groups. In: *Proceedings of a conference on local fields*, pp. 158–183. Berlin-Heidelberg-New York: Springer 1967

B. Marking

1. Text

The words “**Theorem**”, “**Lemma**”, “**Corollary**”, “**Proposition**” etc. are normally printed in **boldface**, followed by the formulation in italics (to be underlined in the manuscript).

The words “*Proof*”, “*Remark*”, “*Definition*”, “*Note*” etc. are printed in *italics* with the formulation in ordinary typeface.

Words or sentences to be set in italics should be marked by single underlining.

2. Formulae

Letters in formulae are normally printed in italics, figures in ordinary typeface.

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Underlining for special alphabets and typefaces should be done according to the following code:

single underlining:	small letter
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yellow:	upright
	(abbreviations e.g. Re, Im, log, sin, ord, id, lim, sup, etc.)
red:	Greek
blue:	Gothic
green:	Script
violet:	the numeral 1, and zero (to distinguish them from the small letter <i>l</i> and the capital letter <i>O</i>)

The following are frequently confused:

$\cup, \mathbf{u}, \bigcup, U; \circ, o, O, 0; \times, x, X, \kappa; \vee, v, \nu; \theta, \Theta, \phi, \varphi, \Phi, \emptyset; \psi, \Psi; \varepsilon, \epsilon;$

$a', a^1;$ the symbol *a* and the indefinite article *a*;

also the handwritten Roman letters:

$c, C; e, l; I, J; k, K; o, O; p, P; s, S; *u, U; v, V; w, W; x, X; z, Z;$

Please take care to distinguish them in some way.

C. Examples

1. Special alphabets or typefaces

Script	<i>A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z</i> <i>a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z</i>
Sanserif	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
Gothic	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
Boldface	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
Special Roman	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, 1
Greek	$\Gamma, \Delta, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Phi, \Psi, \Omega$ $\alpha, \beta, \gamma, \delta, \varepsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \rho, \sigma, \tau, \upsilon, \varphi, \phi, \chi, \psi, \omega$

2. Notations

preferred form	instead of	preferred form	instead of
$A^*, \tilde{b}, \gamma', \mathbf{v}, \mathbf{v}$	$\bar{A}, \tilde{b}, \tilde{\gamma}, \tilde{v}$	$f: A \rightarrow B$	$A \xrightarrow{f} B$
lim sup, lim inf	$\overline{\lim}, \underline{\lim}$	$\cos(1/x)$	$\cos \frac{1}{x}$
inj lim, proj lim	$\underline{\lim}, \overline{\lim}$	$(a+b/x)^{1/2}$	$\sqrt{a + \frac{b}{x}}$
$\exp(-(x^2 + v^2)/a^2)$	$e^{-\frac{x^2 + v^2}{a^2}}$		
f^{-1}	$\overset{-1}{f}$		

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