Constance Reid

Courant

in Göttingen and New York
The Story of an Improbable Mathematician

36 photographs. IV, 332 pages. 1976.
Cloth DM 31,30; US $ 13.90. ISBN 3-540-90194-9
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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.**

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

R. Courant, D. Hilbert: **Methoden der Mathematischen Physik 1**
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R. Courant, H. Robbins: **Was ist Mathematik?**

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W. Thirring

Lehrbuch der Mathematischen Physik

Band 1

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58 Abb. XIII, 255 Seiten. 1977.
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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 zunächst Differentialgleichungen studiert, welche die äußere und Koableitung einer p-Form vorgeben. Die Maxwellschen 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 Maxwellschen 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.

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

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Footnotes, other than those which refer to the title heading, should be numbered consecutively and placed at the foot of the page to which they refer (not at the end of the article).

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

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

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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.
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red:	Greek
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The following are frequently confused:

$\cup$, $\mathbf{u}$, $\bigcup$, U; $\circ$, o, O, 0; $\times$, x, X, κ; $\vee$, v, ν; θ, Θ, ϕ, φ, Φ, $\emptyset$; $\dot{\psi}$, Ψ; ε, $\in$;

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

2. Notations

preferred form	instead of
$A^*, \tilde{b}, \gamma', \mathfrak{v}, \mathbf{v}$	$\bar{A}, \hat{b}, \check{\gamma}, \vec{v}$
lim sup, lim inf	$\overline{\lim}, \underline{\lim}$
inj lim, proj lim	$\varinjlim, \varprojlim$
$\exp(-(x^2+y^2)/a^2)$	$e^{-\frac{x^2+y^2}{a^2}}$
f^{-1}	$\overset{-1}{f}$

preferred form	instead of
$f\colon A \to B$	$A \xrightarrow{f} B$
$\dfrac{\cos(1/x)}{(a+b/x)^{1/2}}$	$\dfrac{\cos\dfrac{1}{x}}{\sqrt{a+\dfrac{b}{x}}}$

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