

The AIP Center
for History of Physics

Let's Make History

The history of physics must be preserved, accurately and fully. Otherwise physicists, their students, and the public will scarcely be able to understand the development of physics and its deep importance for our civilization.

The AIP Center for History of Physics

is dedicated to promoting better understanding of the history of physics and its meaning for society. Programs include:

- Aid to physicists and their families in preserving their papers at appropriate repositories.
- Reference services for textbook writers, historians, and the public.
- Historical research, publications, exhibits.
- A *Newsletter* available free on request.
- The extensive collections of the *Niels Bohr Library*: personal papers of physicists... archival records of physics societies... oral history interviews conducted by the Center and others... photographs... etc.

We Need Your Support

The Center relies on the cooperation and financial support of the physics community. Join us as a Friend of the Center for History of Physics by sending your tax-deductible contribution (any size is welcome) to:
Center for History of Physics
American Institute of Physics
333 East 45th Street
New York, N.Y. 10017



letters

quotes from the monograph by Larry R. Lyons and Donald J. Williams. I would suggest that he read the paper "Magnetic field line reconnection experiments and resistivity, heating and energy flow" by Stenzel and his colleagues. Here the authors provide *quantitative* experimental measurements of the energy balance within the plasma during the reconnection process. They find that during reconnection more than 80% of the electromagnetic power input $-\nabla \cdot (\mathbf{E} \times \mathbf{H})$ is dissipated and goes into particle heating ($\mathbf{E} \cdot \mathbf{J}$) and particle acceleration, with the bulk appearing as heating. Here it should be noted that all of the terms were directly measured. I therefore conclude that while it may remain to be seen that stored magnetic field energy can be transferred to particles in space, it has certainly been observed in the laboratory.

Reference

1. L. R. Stenzel, *et al.*, *J. Geophys. Res.* **87**, 111 (1982).

N. C. LUHMANN JR
University of California
Los Angeles, California

7/85

Serendipity

We are collecting data on:

- references in the literature to the role (however limited or extensive) of chance in the advance of science, engineering and technology
- personal experience of serendipity unrecorded, or incompletely referred to, in published papers.

We would be grateful for any well-documented information that readers can supply. Please send such material to Rustum Roy at 202 Materials Research Laboratory, Pennsylvania State University, University Park, PA 16802.

PATRICK J. HANNAN
Naval Research Laboratory
Washington, D.C.
JOHN F. CHRISTMAN
Loyola University
New Orleans, Louisiana

RUSTUM ROY
Pennsylvania State University
University Park, Pennsylvania

8/85

SDI clarification

I wish to make sure that my remarks quoted in a July Washington Reports story (page 58) are not misinterpreted as a statement of support for the implementation of the Strategic Defense Initiative program. My position is that most of us need to await the data

from The American Physical Society's study of directed-energy weapons before either condemning the project or advocating the expenditure of large sums of money on its behalf.

If people as knowledgeable as Nicolaas Bloembergen and C. Kumar N. Patel need more time to study the problem, it's hard to imagine how the rest of us can make an informed judgment simply by reading the newspapers.

ARNO PENZIAS
Bell Laboratories

7/85

Correction

October—The cover painting is by Julius Paulsen. □

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

(Act of 12 August, 1970; Section 3685, Title 39, USC)

1. Title of publication: PHYSICS TODAY
- 1A. Publication no.: 0031-9228
2. Date of Filing: 1 October 1985
3. Frequency of issue: Monthly (12)
- 3A. Annual subscription price: \$50.00
4. Location of known office of publication: 500 Sunnyside Blvd., Woodbury, NY 11797.
5. Location of the headquarters or general business office of the publisher: 335 East 45th St., New York, New York 10017.
6. Names and address of publisher, editor, and managing editor:
Publisher: American Institute of Physics, 335 East 45th St., New York, NY 10017.
Editor: Gloria B. Lubkin, American Institute of Physics, 335 East 45th St., New York, NY 10017.
Managing editor: Thomas Von Foerster, American Institute of Physics, 335 East 45th St., New York, NY 10017.
7. Owner (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual, must be given): American Institute of Physics, 335 East 45th St., New York, NY 10017.
8. Known bondholders, mortgagees, and other security holders owning or holding one percent or more of total amount of bonds, mortgages or other securities: Guardian Life Insurance Company of America (mortgagee), 201 Park Ave. South, New York, NY 10003.
9. Extent and nature of circulation:
A. Total number copies printed (net press run)
Average* 82 768 August** 86 606
B. Paid circulation
1. Sales through dealers and carriers, street vendors and counter sales
Average* none August** none
2. Mail subscriptions
Average* 78 349 August** 82 500
C. Total paid circulation
Average* 78 349 August** 82 500
D. Free distribution by mail, carrier or other means, samples, complimentary and other free copies
Average* 2127 August** 1905
E. Total distribution (sum of C and D)
Average* 80 476 August** 84 405
F. Copies not distributed
1. Office use, left over, unaccounted, spoiled after printing
Average* 2292 August** 2201
2. Returns from news agents
Average* none August** none
G. Total (Sum of E, F1 and 2—should equal press run shown in A)
Average* 82 768 August** 86 606
* Average number of copies of each issue during preceding 12 months.
** Actual number of copies of single issue published nearest to filing date.

I certify that the statements made by me above are correct and complete.

G. F. Gilbert, Treasurer