

is to generate, through individual interviews with applicants to US graduate schools in physics, reliable information on such applicants regarding their preparation and potential for graduate study. For further information contact M. J. Moravcsik (U. of Oregon) or M. Seadron (U. of Arizona).

MICHAEL J. MORAVCSIK
University of Oregon
Eugene, Oregon

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Nuclear insanity

Physicists have been intimately involved in the MX missile debate, as evidenced by the fact that there was a whole session devoted to this subject at the New York APS meeting. Although prior commitments prevented me from attending this session, I would still like to contribute to the debate.

I believe that considerable light can be shed on the question of the vulnerability of our deterrent system by solving a very simple problem in high-school mathematics. Suppose that the US has 10 000 warheads and the probability of the Russians knocking out any particular warhead in a single attack is 99%, what is the probability that the Russians will knock them all out? (Remember that if we have just a single nuclear warhead left, we can still wipe out Moscow.) The answer, of course, is $(.99)^{10\,000}$, which turns out to be 2×10^{-44} , a very small number indeed.

It is reasonable to assume that this number is not much greater than the probability of a person being struck on the head by a meteorite while walking down the street, and anyone would agree that a person who was obsessed by the fear of being struck by a meteorite, who refused to leave his house because of such fear and who squandered his life savings in attempting to protect himself against this particular catastrophe, is in direct need of psychiatric help. We can only conclude that any "military analyst" who applied the same type of reasoning to his private life that he applies to military problems might be faced with the very real danger of being institutionalized as a paranoid schizophrenic. In short, we can conclude that to anyone willing to exert the effort to use his common sense, the MX missile system is as unnecessary as it is unworkable.

ROBERT J. YAES
Memorial Sloan-Kettering
Cancer Center
New York City

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Laser-induced collisions

The otherwise thorough article by Zare and Bernstein on laser studies of

chemical reaction dynamics (November, page 43) leaves a misleading impression concerning the "infancy" of laser-induced collisional processes. The first reliable observation¹ of laser-induced energy transfer was reported over three years ago. Reports of Penning and associative ionization^{2,3} as well as charge transfer⁴ quickly followed. Recent polarization studies of dynamically correlated collisional redistribution of radiation⁵ broaden further the scope of observed laser-induced phenomena.

These more elementary collisional processes are indispensable for a solid understanding of reaction dynamics. Charge transfer, for example, is the essential characteristic of the celebrated "harpooning" mechanism. Laser-induced associative ionization involves chemical bond formation engendered by intense optical radiation between two free particles. Depolarization studies of dynamically correlated far-wing absorption directly probe two-body collisional interactions at "chemical" internuclear separations.

On the basis of these developments I would argue that laser-induced inelastic collisions, while far from maturity, have at least progressed from infancy to early childhood.

References

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JOHN WEINER

University of Maryland
College Park, Maryland

1/9/81

More on boycott

Having just concluded my resignation from membership and fellowship in The American Physical Society, I ask a few column-inches to raise once again the subject of Council's boycott against states which have not ratified the Equal Rights Amendment. There are two disturbing dysfunctions in this affair which still deserve scrutiny.

Although PHYSICS TODAY spilled much ink over the matter, it was entirely after the fact. Council considered the issue for a year before it acted in November 1978, but made no attempt to use the Society's excellent organs of communication (PHYSICS TODAY, the Bulletin) to inform and consult the membership before taking this unpre-



1981 ANNUAL MEETING

OPTICAL SOCIETY
OF AMERICA
ANNOUNCES THE
1981 ANNUAL MEETING
OCTOBER 26-30, 1981
ORLANDO HYATT HOTEL
KISSIMMEE, FLORIDA

A comprehensive program of short courses, symposia and technical sessions is planned.

ABSTRACT DEADLINE:
June 26, 1981

Special plenary sessions will be held during each of the four days of the technical program. These sessions will highlight topics of current interest to the entire optics community. Present plans include the following special presentations: Optical Effects at Disney World, Thomas J. Durell, Dept. of Computers and Animatronics, Walt Disney World; Saturn Encounters—Voyager 1 and 2, Bradford A. Smith, University of Arizona; Exolaboratory Applications of High Energy Lasers, Peter Franken, University of Arizona.

The plenary sessions will also include presentation of the 1981 Frederic Ives Medal Address by Georg Hass formerly of the U.S. Army Night Vision Laboratory, as well as presentation of the 1980 Frederic Ives Medal Address by Aden Meinel of the University of Arizona.

TECHNICAL EXHIBIT:

An informal exhibit of table-top displays of equipment and materials will be held in conjunction with the meeting. Ample time will be allowed for the attendees to visit the exhibits and exchange information with representatives of companies from all areas of the optical community. Information on the exhibit can be obtained from: Mary Dean VanLandingham, Exhibits Manager.

For further information contact:
Meetings Department
OPTICAL SOCIETY OF
AMERICA
1816 Jefferson Place, NW
Washington, D.C. 20036
(202) 223-8130