

should take into account the balance of contents, the availability of many individual papers elsewhere and the necessarily high price.

JOHN COYLE

---

*Transfer Theory for Trapped Electromagnetic Radiation*

by Georges Lucas; published by Wiley, New York, 1985, 3rd edn.; 96 pp.; price, £9.00

Judging by the cover, the author of this book is evidently a highly-respected chemical engineer and the book itself is in its third edition. To this reviewer, both circumstances are surprising. The basic premise of the book is contained in the first sentence of the foreword, namely: "The laser cavity is transparent to electromagnetic radiation, but remains closed to matter, as there is no transport of absorbing particles from the irradiated cavity to the outside."

This sentence amounts to a fundamental departure from reality, being contradicted by innumerable experiments with flowing gas lasers, jet-stream dye lasers and chemical lasers.

The second sentence of the foreword reads: "It appeared interesting to me to invert this situation and, to investigate the behaviour of an optical cavity closed by a low transparency reflecting grid, which could trap the continuously injected electromagnetic energy corresponding to the absorption band of the particles, the irradiated space remaining completely open to the continuous flow of incoming and outgoing material particles."

Such a grid could probably be constructed, by making the grid's apertures much smaller than the wavelength of the radiation, but why bother? Matter can be allowed to enter or leave freely in directions away from the optical axis of the cavity.

The rest of the book is concerned with the imagined effects, on matter inside the cavity, of compressing the trapped photon gas by moving the ends of the cavity closer together.

One can only conclude that this is an elaborate practical joke, directed at the reader and probably also at the publisher. Unfortunately, it is not even funny.

L. F. PHILLIPS