Book Review: *The Maximum Entropy Formalism*

The Maximum Entropy Formalism. Edited by R. D. Levine and M. Tribus.
MIT Press, Cambridge, Massachusetts, 1979.

This volume contains most of the papers delivered at a conference held at the
Massachusetts Institute of Technology during May 1978. The conference
marked the anniversaries of many of the key papers that have contributed to
the development of the maximum entropy formalism (MEF). Among them
are the work of Boltzmann (100 years ago), Gibbs (75 years), Elsasser (40
years), Cox (30 years), and Jaynes (20 years). The latter three participated in
the conference and their papers appear in this volume.

MEF has its roots in information theory and therein lies its strengths and
its weaknesses. Its strengths lie in its wide field of applicability, as testified to
by the variety of fields discussed in this volume. Applications to reaction
kinetics, molecular and nuclear collisions, statistical mechanics, biology, and
"life" are discussed. The weakness of MEF, not unique to this formalism by
any means, is that it does not contain within itself any criteria for its valid
application. Still, many useful points of view have been stimulated by the ideas
contained in MEF, particularly as formulated by Jaynes in his previous work
and in this volume. The success of the application of MEF to individual
collisions by R. D. Levine and his collaborators is extremely thought-
provoking.

Research workers in a wide variety of scientific fields will find this volume
a useful reference.

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