Preface

If you were duplicating previous work,
it wouldn't be inventing, would it?
Stephen Wolfram

Over the last three years, 2020-2023, I have published articles in three areas of physics and Computational Mathematics in refereed journals of Scientific Research Publishing (SCIRP). These are the World Journal of Mechanics (WJM), the Journal of Electromagnetic Analysis and Applications (JEMAA), the Journal of Modern Physics (JMP), and the American Journal of Computational Mathematics (AJCM). All these are available online at https:\\www.script.com. The motivation for publishing this book is to put these articles in one place in a book format so the interested individual would have access to all.

The contents of these physics and mathematics discipline-based articles span various topics with multiple objectives, they share one unique common theme, Computer Algebra System (CAS), particularly *Mathematica*. We are living in an era in which CAS has penetrated the fabric of science and math and as I have shown many issues mostly fresh have been addressed. All the articles embody *Mathematica* codes so that the interested reader easily may produce the reported results.

All the articles end with Conclusions embodying a frequent use of the phrase "what if" potentially intriguing the interested reader to explore and extend the issue on hand by suggesting tweaks conducive to new research projects.

Applications of *Mathematica* provide such opportunities. I have been using *Mathematica* since its inception in 1985, and I attest to its power and usefulness. There are many resources to get acquainted with the language, I included two books of my own [1] [2]. Most of the other resources are cited in the references within the enclosed articles.

Most of the articles have been presented at about 35 refereed discipli-

nary international conferences. Hoping this book will motivate some.

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[1] Sarafian, H. (2019) *Mathematica* Graphics Examples. 2nd Edition, Scientific Research Publishing, Wuhan. ISBN: 978-1-61896-668-1

[2] Sarafian, H. (2015) *Mathematica* Graphics Example Book for Beginners, Scientific Research Publishing, Wuhan. ISBN: 978-1-61896-091-7