

Preface

“If, in some cataclysm, all of scientific knowledge were to be destroyed, and only one sentence passed on to the next generations of creatures, what statement would contain the most information in the fewest words? I believe it is the *atomic hypothesis* (or the *atomic fact*, or whatever you wish to call it) that *all things are made of atoms — little particles that move around in perpetual motion, attracting each other when they are a little distance apart, but repelling upon being squeezed into one another*. In that one sentence, you will see, there is an *enormous* amount of information about the world, if just a little imagination and thinking are applied.”

Richard Feynman
Lectures on Physics

In this monograph we have tried to apply “a little imagination and thinking” to modelling dynamical phenomena from a classical atomic and molecular point of view. Nonlinearity is emphasized, as are phenomena which are elusive from the continuum mechanics point of view. FORTRAN programs are provided in the Appendices. Throughout, the spirit is that in the quotation cited above.

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Arlington, Texas
1990