

CHARMANDER User Manual

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0.1 Introduction

Combustion is a highly complex phenomenon which to be fully understood requires a analysis of turbulence, mixing, chemical kinetics and in some cases, even radiation.

To start understanding such a complex process, it's necessary to understand the basics of turbulence, combustion, mixing, chemical kinetics, reduction mechanisms and radiation. The first chapter will contain a bibliographical revision of these concepts.

Then it's necessary to understand how those concepts become a simulation through an program, so in the second chapter will be explained the process of simulation.

At last, in the fourth chapter, when the user finally understands the reasoning behind the program, it will be presented the **CHARMANDER** software interface.

0.2 Bibliographical Revision

0.2.1 Turbulence

0.2.2 Combustion

0.2.3 Mixing

0.2.4 Chemical Kinetics

0.2.5 Reduction Mechanisms

0.2.6 Radiation

0.3 Understanding Simulation

0.4 CHARMANDER Software

Chapter 1

Appendix