

## 6.1 Introduction

A multiphase flow is the flow of a mixture of phases or components. Such flows occur in the context of nuclear power generation either because the reactor (such as a BWR) is designed to function with a cooling system in which the primary coolant consists of several phases or components during normal operation or because such flows might occur during a reactor accident. In the latter context, predictions of how the accident might progress or how it might be ameliorated may involve analyses of complicated and rapidly changing multiphase flows. Consequently some familiarity with the dynamics of multiphase flows is essential to the nuclear reactor designer and operator. This chapter provides a summary of the fundamentals of the dynamics of multiphase flows. In general this is a subject of vast scope that ranges far beyond the limits of this book. Consequently the reader will often be referred to other texts for more detailed analyses and methodologies.