

AS Analysis Seminar

NCTS Course

An Introduction to Classical Kinetic Theory of Gases

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Abstract:

Kinetic theory of gases has been one of important subjects in non-equilibrium statistical mechanics. At the same time, it has been an important practical tool to handle non-equilibrium gas flows, such as gas flows in micro-scales and in low-density circumstances. The aim of the present course is to provide an introduction to kinetic theory from physical point of view. First, the basic concept is explained, and a physical derivation of the Boltzmann equation is demonstrated. Then, the basic properties of the Boltzmann equation are explained. After these preparations, the relation between kinetic theory and fluid dynamics is discussed in detail. As applications of kinetic theory, some phenomena peculiar to rarefied gases (gases in micro-scales or low-density gases), such as gas flows caused by temperature fields, are considered, and their properties are discussed.

Time : 11:00 ~ 14:00, October 17—December 12 (Every Monday)

Venue : 天文數學館 440 (台大校區)

Room 440, NCTS (Astro-Math Bldg., NTU)

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