Department of Mathematics
City University of Hong Kong

Colloquium

Organised by Prof. Tong YANG and Dr Xianpeng HU

Derivation Principle of BGK Models

by

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France

Abstract :

In this talk we will present a derivation principle of BGK models using the resolution of an entropy minimization problem. The construction is based as on the introduction of relaxation coefficients and a principle of entropy minimization under constraints for moments. These free parameters are next adjusted to transport coefficients when performing a Chapman-Engskog expansion ip to Navier-Stokes. Firstly, the methodology will be explained and illustrated for a monoatomic and polyatomic single gas. Next the case of gas mixtures is considered. In this part, after clarifying the Chapman-Engskog, a BGK model is derived. This BGK model is proved to satisfy Fick and Newton laws. In a last part, we will explain how to extend our model to reacting gas mixtures.

Date: 29 September 2017 (Friday)
Time: 4:30 – 5:30pm
Venue: B4702, Yeung Kin Man Academic Building (AC1)
City University of Hong Kong

** All interested are welcome **
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