

# Academia Sinica-NCTS Course

## (1) Kinetic theory and fluid dynamics

- (a) Instructor: **Kazuo Aoki** (NCTS & National Cheng Kung University)
- (b) Course Outline: brief introduction to kinetic theory of gases, Chapman-Enskog and Hilbert expansions, Sone's generalized slip flow theory (linear theory, weakly nonlinear theory, fully nonlinear theory), ghost effect.
- (c) Prerequisite Course(s): Linear algebra and multi-variables calculus.
- (d) Grading: Homework will be assigned weekly, and no exam.
- (e) Textbook: None. [Reference: Y. Sone, Kinetic Theory and Fluid Dynamics (Birkhauser, 2002); Molecular Gas Dynamics: Theory, Techniques, and Applications (Birkhauser, 2007)]

## (2) Introduction to shock wave theory

- (a) Instructor: **Tai-Ping Liu** (Academia Sinica)
- (b) Course Outline: weak solutions, entropy conditions, Riemann problem, well-posedness theory, nonlinear waves, non-linear resonance.
- (c) Prerequisite Course(s): Linear algebra and multi-variables calculus.
- (d) Grading: Homework will be assigned weekly, and no exam.
- (e) Textbook: None.

**Time** : October: 12,19, 26 ; November: 2,9,16,23,30, 2017

11:20~13:10(第四、五節) and 14:20~16:20(第七、八節)

**Venue** : **Room 304**, NCTS (Astro-Math Bldg., NTU)



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