# 國立中山大學應用數學系
# 學術演講

講　者：郭鴻基 教授 (台灣大學 大氣科學系)

講　題：Two-dimensional turbulence and typhoon vorticity dynamics

時　間：2023/11/16 (Thursday) 14:10~15:00

地　點：理 SC 4009-1 教室

茶　會：13:30

## Abstract

Earth's atmosphere and ocean, under the influence of rotation and density stratification, exhibit complex patterns of fluid motion over a wide range of space and time scales. The two-dimensional turbulence, which may be stemmed either from the fluid rotation or the fluid internal stratification, has been a paradigm for atmospheric oceanic fluid dynamics (AOFD). It is a remarkable fact that for any type of random initial state or external forcing, a two-dimensional fluid will rapidly organize itself into a system of coherent, interacting vortices swimming through a sea of passive filamentary structure produced from earlier vortex interactions. This discipline has also been instrumental in the development of single charge plasma physics, galaxy spiral, the Great Red spot, the ozone-hole problem and the typhoon dynamics. A brief review of 2D and 3D turbulence will be given. The mathematical nature of the 2D turbulence will be addressed. The nonlinear typhoon vorticity dynamics, such as eyewall rotation and mixing and the development of 200 PVU vortex will be presented. The related mathematics will be addressed.

敬 請 公 告！ 歡 迎 參 加！

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