

# Joint CQSE and CASTS Seminar

**Weekly Seminar**  
**Sep. 30, 2011 (Friday)**

**TIME** Sep. 30, 14:30 ~ 15:30  
**TITLE** Analytical study of critical magnetic field in a holographic superconductor  
**SPEAKER** Dr. Wen-Yu Wen  
Department of Physics, CYCU  
**PLACE** Rm716, CCMS & New Physics Building, NTU

## Abstract

We analytically study the effect of external magnetic field in a Holographic superconductor by using Sturm-Liouville method. We estimate the coefficient of proportionality at critical temperature and find its dependence on external magnetic field. By exploring phase diagrams of critical temperature and magnetic field for various condensates, we conclude that a Meissner-like effect is a general feature in Holographic superconductors. We also study the quantum phase transition at zero temperature and find that critical charge density increases linearly with the condensate dimension.

