

# 臺灣大學數學系演講

## Inverse Problems Seminar

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**講 題**： **Functional Magnetic Resonance Imaging for the Brain(腦部功能性磁振造影)**

**時 間**： 2011年11月23日 (星期三) 14:20~15:20

**地 點**： 臺灣大學天文數學館 305 室

**摘 要**： Blood oxygenation level dependent (BOLD) functional magnetic resonance imaging is a popular tool in neuroscience. BOLD imaging is flexible, free of invasiveness, and capable of offering spatial mapping with fine resolution (usually on the order of millimeters). In contrast to electroencephalogram and magnetoencephalogram, BOLD imaging does not detect neural activities directly but rather measures the accompanying hemodynamic response, a much slower response as compared to neural electrical activity (seconds vs. milliseconds). Specifically, BOLD contrast is contributed by cerebral blood flow (CBF), cerebral blood volume (CBV), and the cerebral metabolic rate of oxygen (CMRO<sub>2</sub>), although the exact mechanism underlying BOLD contrast is still under investigation. To avoid misinterpretation and confusion, BOLD measurement should be conducted with properly optimized imaging parameters as well as hardware stability. Interpretation of BOLD signal, both positive and negative responses, should be made with caution.

**主辦人**： 王振男 <http://www.math.ntu.edu.tw/~jnwang/ipseminar.htm>