

The BOLD effect and fMRI of the brain

Since its inception, now 25 years ago, the Blood-Oxygenation-Level-Dependent effect has enabled remarkable scientific and clinical discoveries. Yet functional MRI data need careful interpretation, in virtue of its multi-factorial physiological origin and the many available MRI acquisition and statistical analysis methods put into use. In this lecture I will first give an overview of the biophysical underpinnings of the BOLD effect, including topics like neurovascular coupling and structure of the veins. Next, an outline covering main aspects of different approaches for acquiring and analysing the data will be presented.