The Singapore Bioimaging Consortium (SBIC)
presents a seminar on

"Study of tissue microstructure in brain using multi-echo gradient echo data at 7 Tesla"

Speaker: **Kiran Thapaliya**
Centre for Advanced Imaging
The University of Queensland, Australia
Hosts : **Dr Velan S. Sendhil**
Date : **Friday, 27 July 2018**
Time : **3.00pm – 4.00pm**
Venue : **SBIC Seminar Room**
11 Biopolis Way
Level 2, Helios Building, Singapore 138667
(Please enter via Level 1)

Abstract

Quantitative assessment of tissue microstructure is important in studying human brain diseases and disorders that has been linked to stroke, epilepsy, Parkinson, Alzheimer's and multiple sclerosis. Ultra-high field MRI (7T and above) affords improved image signal-to-noise ratio, contrast and new contrast mechanisms but it does not allow data to be acquired at the microscale resolution where early and important changes due to diseases and disorders occur. However, development of different models helps to study tissue microstructure changes based on millimeter scale MRI data to achieve more accurate and earlier diagnosis and improved monitoring. The main advantages of these models are: a) they relate millimeter scale measurements to changes in tissue microstructure at the microscale, and b) achieve a direct relationship between quantitative model parameters and a specific microscale change. In this talk I will present some model-based image analysis approaches in the contexts of multi-echo gradient echo data and provide specific examples of how changes in tissue microstructure could potentially be measured.

About the Speaker

Kiran Thapaliya is a PhD student in The University of Queensland. He is working with Markus Barth group at the Centre for Advanced Imaging using ultra high field imaging equipment, 7 Tesla. His PhD project is to study the influence of white matter microstructure on MRI signal using multi-echo gradient echo at ultra-high field. He was recently a visiting researcher in Washington University in St. Louis, USA to work with Dmitriy Yablonskiy to learn new techniques to map tissue microstructure in the brain.

--- Admission is free and all are welcome ---