学术报告通知

报告人：法国里昂国立应用科学学院 Zhu Yuemin 教授
题　　目：Generalized intravoxel incoherent motion model: application to the characterization of the liver tissue
时　　间：**2016 年 4 月 29 日（周五）10:00-11:00**
地　　点：电院群楼 2-410
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Mr. Yuemin Zhu received his M.Sc. degree in 1984 and Ph.D. in 1988 from the INSA (Institut National des Sciences Appliquées), Lyon, France. He also obtained the "Habilitation à Diriger des Recherches" (博导) in 1993, France. He is a permanent professor at the CNRS (Centre National de la Recherche Scientifique) of France. He is currently principal investigator of several research projects on medical imaging. His research interests include image modeling, simulation, representation, reconstruction, correction, denoising, registration, segmentation, visualization, and fusion. He is the author and co-author of more than 220 publications including those in IEEE Trans. on Image Processing, IEEE Trans. on Medical Imaging, IEEE Trans. on ASSP, IEEE Trans. on Nuclear Science, IEEE Trans. on Instrumentation and Measurement, IEEE Trans. on Biomedical Engineering, Medical Image Analysis, MRM, JMRI, IPMI, MICCAI, etc.

报告摘要：
People with liver diseases reached more than 1300 million in the world, more than 500 million in USA/Europe, and more than 400 million in China. Particularly in China, the prognosis of liver diseases has central importance. For this reason, searching for new markers to characterize liver tissue perfusion appears an interesting approach.

In this talk, a generalized intravoxel incoherent motion (IVIM) model, called the GIVIM, is presented to better account for complex perfusion present in the tissues having various vessels and flow regimes, such as the liver. The idea consists in introducing the notions of continuous pseudo-diffusion variable as well as perfusion fraction density function to describe the presence of multiple perfusion components in a voxel. The mean and standard deviation of Gaussian perfusion fraction density function are then used to define two new parameters, the mean pseudo-diffusivity ($\overline{D}$) and pseudo-diffusion dispersion (σ). The GIVIM model is evaluated by testing whether or not it can reflect hepatic perfusion difference caused by flow-compensated imaging sequences having different diffusion times. Also, $\overline{D}$ was compared with D^* in the standard IVIM model. The results show that The proposed GIVIM model has the ability to better describe multi-component perfusion without lengthening acquisition time and knowing in advance the number and/or the variety of perfusion components.