

TCS/18/40 - A new imaging processing method for ultrasound imaging to diagnose prostate tumours

Prostate cancer incidence and deaths from the disease have both significantly increased in recent years. Current diagnostic approaches are unpleasant, costly and invasive. Additionally, many men undergo radical treatments that can have long-term detriment on their quality of life because current methods to characterise these tumours are not always able to predict the patient's likely disease progression with sufficient confidence. We propose a new image analysis method based on diagnostic ultrasound in order to find prostate disease early. Since cancer has different blood flow compared to normal prostate the proposed technology aims to provide a 10-fold improvement in the detail in mapping the blood flow (i.e. from half a millimetre to a 20th of a mm). This unique method will help determine the state of a tumour. We will use images from volunteer prostate patients in order to develop our image analysis method and subsequently assess its potential for prostate cancer diagnosis.