

## **Analysis of attenuation effects in photoacoustic tomography**

Photoacoustic Tomography (PAT) is a hybrid medical imaging method, which works by measuring the pressure wave induced by an EM pulse. The method combines the high resolution of ultrasound waves and the high contrast of EM waves. The classical results about PAT assume a non-attenuating media, and will give low-quality images when used in lossy media. In this talk, I will present our general model for wave attenuation. I will also give our result stating the PAT inverse problem is highly ill-posed in an attenuating media, by giving an exponential decay rate for the eigenvalues. The result is applicable to a large number of different attenuation models.