ALPEN-ADRIA UNIVERSITÄT KLAGENFURT

INVITATION TO THE DOCTORAL SEMINAR

Mathematical Aspects of Photoacoustic Imaging

Dr. Cong Shi | University of Vienna

Chaired by Barbara Kaltenbacher | Department of Mathematics

Wednesday, 9 November 2022 | 10:00–11:00

N.2.35

ABSTRACT

Photoacoustic imaging (PAI) is a biomedical imaging modality based on the photoacoustic effect. In this talk, I will first introduce some background and history of PAI, and then present how to derive the mathematical model, furthermore, with considering a general attenuation effect. Since this physical process corresponds to a inverse problem, I will also give some basics about this inverse problem, and show our analysis on it, including the existence and uniqueness for the solution of this attenuation model, also the ill-posedness of the inverse problem. At the end, we show some numerical experiments in constant attenuation medium and general weak attenuation medium in 2D. This is a cooperation work with Peter Elbau and Otmar Scherzer.

We hope to see you there!