



universität
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Fakultät für Mathematik

Mathematisches Kolloquium

Mittwoch, 15. November 2017

Sky Lounge

EINLADUNG

Todd Quinto

(Tufts University)

"Artifacts in arbitrary limited data tomography problems"

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Abstract:

In this talk, we will describe work of the speaker along with Leise Borg, Jürgen Friel, and Jakob Jørgensen characterizing how artifacts appear in limited data X-ray tomography with arbitrary data sets both when the boundary of the data set is smooth and when it is not smooth. We also provide estimates of the strength of the added artifacts in some cases, and we illustrate our results using standard and non-standard limited data tomography problems with real and simulated data. We put our results in a general mathematical framework that can be used on a range of limited data problems in which the forward and reconstruction operators are Fourier integral operators. We outline the proof, which is based on microlocal analysis. This work is motivated by an unusual synchrotron CT data set that we will show that has artifacts not seen in standard limited data problems. Dieser Vortrag ist für alle mit einem allgemeinen mathematischen Hintergrund.

15.45 Uhr: Kaffeejause

16.15 Uhr: Vortrag

vinum cum pane im Anschluss

Otmar Scherzer
Christian Krattenthaler