<u>计算数学所学术报告</u>

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<u>报告题目</u>：

Frequency extrapolation from band-limited data

<u>邀请人</u>：　许志强研究员

<u>报告时间</u>：**2018** 年 **3** 月 **7** 日（周三）

下午 14:00--15:00

<u>报告地点</u>：　数学院科技综合楼

Z311 报告厅

<u>报告摘要</u>：

Frequency extrapolation from band-limited data is an important problem in the field of exploration seismology. Due to physical constraints, the frequency range of seismic

data are approximately 5Hz-180Hz depending on the specific setup of the survey. This band is often considered severely limiting in both the low and high frequency extent for the purposes of deducing large-scale structures as well as fine features of the underlying subterranean geology. In particular, the missing low frequencies from 0Hz to 5Hz are known to be extremely essential for an accurate inversion procedure. In this talk, we study possible approaches to solve the frequency extrapolation problem from mid-band data. In particular, we provide conditions as well as theoretical guarantees for an accurate spectrum reconstruction. The results are further supported by both stylized numerical experiments as well as a simulation for seismic inversion