

NUMERICAL ANALYSIS AND SCIENTIFIC COMPUTING
SEMINAR

The retrieval problem in remote sensing

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Abstract: In this talk, we will present the retrieval problem in remote sensing, focusing specifically on data analysis from the FORUM spectrometer, which is the 9th ESA Earth-Explorer mission scheduled for launch in 2027. Data analysis from spectrometers is an interesting mathematical inverse problem. We will begin by introducing the direct problem, also known as radiative transfer, and demonstrate that the inverse problem, as is typical with most inverse problems, is ill-posed. We will then discuss the optimal estimation method commonly used in the remote sensing community to address the inverse problem. Finally, we will highlight some challenges related to inverse problems that could benefit from collaboration with mathematicians.

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