מכון ויצמן למדע

THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Vision and Robotics Seminar

Room 1 ,Ziskind Building
on Thursday, Mar 15, 2018
at 12:15

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Technion

Three-Dimensional Scatterer Tomography

Abstract:

Scattering effects in images, including those related to haze, fog, and appearance of clouds, are fundamentally dictated by microphysical characteristics of the scatterers. We define and derive recovery of these characteristics, in a three-dimensional heterogeneous medium. Recovery is based on a novel tomography approach. Multiview (multi-angular) and multi-spectral data are linked to the underlying microphysics using 3D radiative transfer, accounting for multiple-scattering. Despite the nonlinearity of the tomography model, inversion is enabled using a few approximations that we describe. As a case study, we focus on passive remote sensing of the atmosphere, where scatterer retrieval can benefit modeling and forecasting of weather, climate, and pollution.