

## **Reflectance imaging at superficial depths in strongly scattering media**

Arnold Kim, University of California Merced

Measurements of light backscattered by a strongly scattering medium contain light scattered at all penetration depths. By studying the theory of radiative transfer for this problem, we develop a simple model for backscattered light measurements based on the double-spherical harmonics approximation of order one. Through an asymptotic analysis of this reduced model in the strong scattering limit, we develop an elementary method that reveals how information is structured in backscattered light measurements. Using this model, we propose a method to image in multiple scattering media at superficial depths.