

**APPLICATION OF SYNTHETIC KERNEL (SK_N) APPROXIMATION TO RADIATIVE
TRANSFER PROBLEMS IN PARTICIPATING, LINEARLY ANISOTROPICALLY
SCATTERING HOMOGENEOUS AND INHOMOGENEOUS SOLID SPHERICAL
MEDIUM**

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ABSTRACT. The Synthetic Kernel (SK_N) method is applied to a solid spherical absorbing, emitting and linearly anisotropically scattering homogeneous and inhomogeneous medium. The SK_N method relies on approximating the integral transfer kernels by synthetic kernels. The radiative integral transfer equation is then reducible to a set of coupled second-order differential equations. The SK_N method which uses Gauss quadratures is tested against integral equation and the discrete-ordinates S_8 solutions for various optical radius and scattering albedo variations.

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