

The objective is to generate numerous 3D cirrus fields with imposed (mean and standard deviation) optical depth correlated to effective radius and to phase

function sharing statistical properties derived from in situ and ATrain data. (Multi)Fractal or spectral methods are adequate to describe scale invariance properties of cloud. Nevertheless, such approaches do not take into account dynamical non linear processes (convection, shear...). The idea is following. In a first step, humidity (vapor and iced/liquid), and temperature are advected in 3D turbulent wind field with prescribed vertical potential temperature. This fast but too simple scheme provides "realist" 3D shapes without "realist" optical properties (lack of numerous physical processes, numerical diffusion...). Therefore statistical optical properties are corrected with specific toolboxes (theoretical PDF, iterative ranking, spectral, correlation methods...).



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