MULTILAYER MODELING OF RADIATIVE TRANSFER BY SLW AND CW METHODS IN NON-ISOTHERMAL GASEOUS MEDIUM

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ABSTRACT

Non-isothermal gaseous media is modeled using the multilayer approach, breaking the one-dimensional system into a series of isothermal layers. Spectral integration of the Radiative Transfer Equation is performed for the Spectral Line Weighted-sum-of-gray-gases and Cumulative Wavenumber approaches to modeling the spectral nature of the gas radiation. An exact analytical solution of RTE is obtained for the layers with both black and gray walls. Predictions show high accuracy, even with surprisingly few layers.