k-MOMENT APPROXIMATION FOR THE NARROW BAND MODELING OF THE RADIATIVE PROPERTIES OF NONUNIFORM GASEOUS MEDIA

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ABSTRACT. Moments of the absorption coefficient distribution function are used for the derivation of Statistical Narrow Band (SNB) model parameters of nonuniform optical paths in gases. The approach yields approximations for the path averaged first and second order *k*-moments from which equivalent SNB parameters are determined in the frame of the Malkmus model. The approach is assessed through comparisons with LBL data. The nonuniform approximation is shown to enable the computation of transmissivities and radiation intensities with accuracy similar or higher than those achieved by the Curtis-Godson one.