LOCALLY CORRELATED SLW MODEL FOR PREDICTION OF GAS RADIATION IN NON-UNIFORM MEDIA

Vladimir P. Solovjov¹, Brent W. Webb¹, Frederic André², Denis Lemonnier³

¹Brigham Young University, 360G EB, Provo, UT 84602, USA
²Univ Lyon, CNRS, INSA-Lyon, Université Claude Bernard Lyon 1, CETHIL
5008 Villeurbanne, France
³ISAE-ENSMA, BP 40109, 86961 Futuroscope Chasseneuil Cedex, France

ABSTRACT. Following previous theoretical development based on the assumption of a rank correlated/comonotonic spectrum, the Locally Correlated SLW (LC-SLW) method is outlined. The relationship between the LC-SLW method and the RC-SLW method is established, and their performance in prediction of radiative transfer is compared. Despite the fact that the RC-SLW model demonstrates better overall accuracy, the LC-SLW model generally proves more accurate in regions of higher gas temperature.