



Parameterization of the Longwave Atmospheric Radiation from Easy-to-Measure Meteorological Variables

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Knowledge of downward atmospheric radiation (LW) is necessary for several applications such as meteorology, climatology, remote sensing, and the study of radiative cooling of buildings. The measurement of atmospheric radiation requires costly equipment which is not easily available. In situations for which radiation data are scarce, models are commonly used to estimate the LW radiation from easy to measure meteorological data. The most commonly used parameters for estimating LW radiation are the screen level temperature and the pressure of water vapour. In this work, empirical model for predicting LW radiation under clear sky conditions in mid-latitude city temperatures is proposed. The model is based on the screen level temperature and the vapour pressure. The model was found to predict the LW radiation with high accuracy and good statistics. The performances of some of the available models have been carried out.