

6a.3 Reducing model systematic bias through integrated observational and modeling data analytics

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The accuracy of the single layer urban canopy model (SLUCM) within the Advanced Research Weather (ARW) Weather and Research Forecasting Model (WRF) is evaluated over Houston. Five simulations were conducted for 65 hour time periods in August 2000. The planetary boundary layer (PBL) schemes used for these simulations were the Yonsei University Scheme (YSU) scheme, the Mellor-Yamada-Janjic (MYJ) scheme, the Mellor-Yamada-Nakanishi-Niino 2 (MYNN2) scheme, and the Boujeault-Lacarrere (BouLac) scheme. A fifth simulation was run that incorporated the BULK urban scheme and the YSU scheme. The accuracy of the SLUCM and BULK schemes was evaluated by comparing the model with TCEQ (Texas Commission on Environmental Quality) observations. Preliminary results showed that the YSU and MYJ schemes most accurately matched the observations. The least accurate scheme was the MYNN2. The YSU/SLUCM combination captured the maximum afternoon heating slightly better than the YSU/BULK combination. Recently an improved SLUCM has been developed that includes five new urban hydrological processes. The eventual goal of this project is to compare both urban canopy models using the same model configurations and understand the causes behind the differences in both models.