



Correction of humidity bias for Vaisala RS80-A and MODEM sondes during AMMA 2006 observing period

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During the African Monsoon Multidisciplinary Analyses (AMMA) program whose Special Observing Period took place over West Africa in 2006, a major effort has been devoted to monitor the atmosphere and its water cycle. The radiosoundings network has been upgraded and enhanced, and GPS receivers deployed.

The various sondes used in the campaign exhibit a significant humidity bias:

- dry bias for Vaisala RS80-A at daytime and nighttime, for RS92 and MODEM M2K2 at daytime only
- moist bias for MODEM M2K2 and Vaisala RS92 at nighttime

This presentation makes use of a simple but robust statistical approach to correct the bias. Validation against independent GPS data shows that a first correction (to be implemented in the database in early 2009), removes the night bias for MODEM and Vaisala RS-80A, and strongly reduces it for daytime RS80-A launches. The correction dramatically modifies the CAPE, which becomes much more in line with expected values over the region. A second correction (under development) will address the remaining daytime bias, thanks to an inter-comparison exercise performed in Niamey in September 2008.