Use of CHUVA data to improve and validate the BRAIN rain retrieval algorithm

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BRAIN is a rain retrieval algorithm meant to produce instantaneous rain field using brightness temperatures from such conical scanning microwave imagers as TMI, SSMI, SSMIS, MADRAS and AMSR-II. It is a Bayesian scheme that relies upon a retrieval database to find the most probable rain rate within the space of possible solution. As any Bayesian scheme, the final results should be unbiased with respect to the retrieval database. If the latter is global, the result should be unbiased at the global scale. Nevertheless, the regional biases might be substantial because of specific regimes.

The presented work will show the performances of BRAIN over South America and more specifically Brazil. The various rain rates retrieved from the various platforms will be compared to the X-band radar from CHUVA and an particular emphasis will be given to warm rain regions.

New concept of probabilistic solution for the retrieved rain will also be presented.