



## Comparing rainfall features in two experimental basins in Brazil

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This paper presents a comparison between rainfall data of two experimental basins in Brazil, both located in the Northeast, but in different climate regimes. The first experimental basin is the Guaraíra river, which is in the Paraíba State, in the coastal region, where the average rainfall is about 1.700 mm/year. According to Köpper the climate is tropical with dry summer. The second experimental basin used was the Aiuaba basin, located in the Ceará State, in the semiarid region, where the average rainfall is about 580 mm/year. Both experimental basins belong to the network for hydrology of the semiarid region (REHISA in Portuguese), that was created in Brazil in 2003. The aim of this paper was to analyze only rainfall events named as non-characterized, once the hyetograph does not have a recognizable shape (triangular or rectangular).

In order to define the rainfall event the Minimum Intra-event Time (MIT) criteria was used, in this case equal to thirty minutes and six hours, furthermore, the rainfall events with depths less than 1,016 mm were discarded. The studied period for the Guaraíra experimental basin from 2003 to 2014, while to the Aiuaba EB was from 2004 to 2011. The results showed a good relationship between total rainfall data analysed and the yearly rainfall, but Guaraíra EB presented a better agreement, with determination coefficient equal to 0.95, while Aiuaba EB was 0.78 to MIT= 6 hours. Considering the MIT= 30 minutes, the determination coefficient was equal to 0.83 in Guaraíra EB, while Aiuaba EB was 0.89. Differently the relation above, the intensity in Aiuaba EB always is greater than Guaraíra EB, where to MIT=6 hours, the average intensity was 9.6 mm.h<sup>-1</sup> and 7.4 mm.h<sup>-1</sup>, while to MIT=30 min, the average intensity was 4.5 mm.h<sup>-1</sup> and 2.3 mm.h<sup>-1</sup>, respectively. The rainfall intensities were then classified into five different categories (ranging from very light to extreme). Guaraíra EB presented 90% of the rainfall events classified either as very light, light or moderate, while Aiuaba EB presented 65% classified into these three categories. In both experimental basins very heavy and extreme events were few, 3 events for Guaraíra EB and 2 events for Aiuaba EB to MIT= 6 hours. The conclusions pointed out that the necessity to study better the rainfall events, using different MITs, in different regions from Brazil.