

## CPS2.3: Spatial variability of rainy season onset characteristics across the São Paulo state, Brazil

Aline Maia<sup>1</sup>, Mári Firpo<sup>2</sup>, Ana Ávila<sup>3</sup>, Caio Coelho<sup>2</sup>

<sup>1</sup> Embrapa, SP, Brazil

<sup>2</sup> CPTEC/Inpe, SP, Brazil

<sup>3</sup> Cepagri/Unicamp, SP, Brazil

**Email:** aline.maia@embrapa.br

### Abstract

Planning of economic activities, which are influenced by local pluviometry, depends on forecasts related to rainfall amount and its temporal distribution. In agriculture, for example, definition of crops calendar requires information on temporal patterns of the rainy season onset. In the SP state, Brazil, the onset occurs between late September and early October, with high variability among stations or years. Daily data (1961 - 2013) from 129 stations from São Paulo state were used in this study. The time to onset of rainy season (T, days after 01/07) was determined for each year and station, by Liebmann criteria. The T empirical distribution (n=53), for a particular station, represents the local onset interannual variability. Quartiles of such distributions were therefore used to perform cluster analysis, resulting in eight groups. The following spatial patterns were observed: two groups located at the inferior and superior pieces of the NW-SE diagonal of the state, respectively; another group, without spatial continuity, placed at parallel extreme strips, above, and below the NW-SE diagonal while two other groups, concentrate at extreme SE. Jaborandi and Iguape stations constitute isolated points, showing patterns, which are extremely different from all the others groups. Results show high onset space-temporal variability: median T varying from 100.5 (9/10) to 155.5 days (02/12) among stations and, in the stations with maximum interannual variability, the T range was 171 days. The similarity among patterns is related, in general, to stations spatial distribution, which allows delimitation of regions where similar patterns of onset variability are predominant.