VARIABILITY OF THE INFLOW AT THE INTRASEASONAL SCALE AND RELATIONSHIP WITH PRECIPITATION FROM THE BAM MODEL

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MOTIVATION

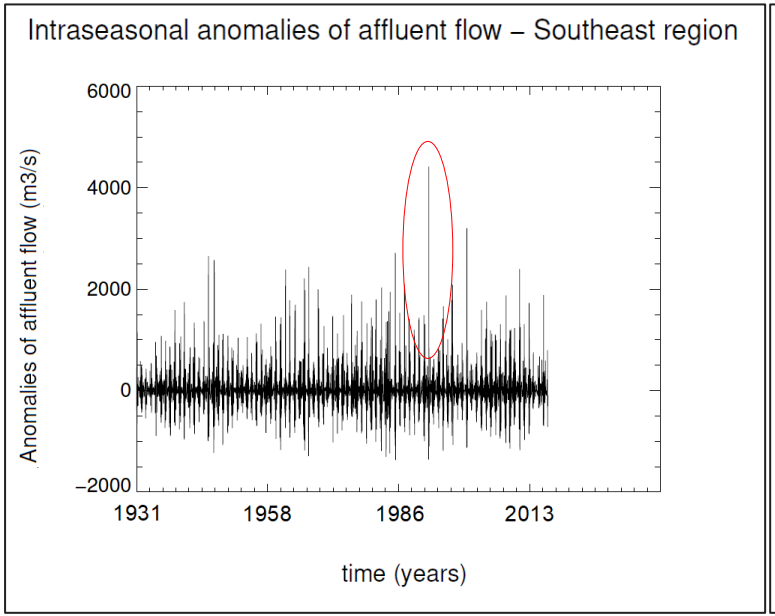
- Constant challenges of Brazilian water planning: (agriculture, supply, energy);
- Highest occurrence of water crisis;
- Flow – Rainfall regime – Climatic variability;
- Lack of studies related to the intraseasonal scale and the country's hydropower variability.

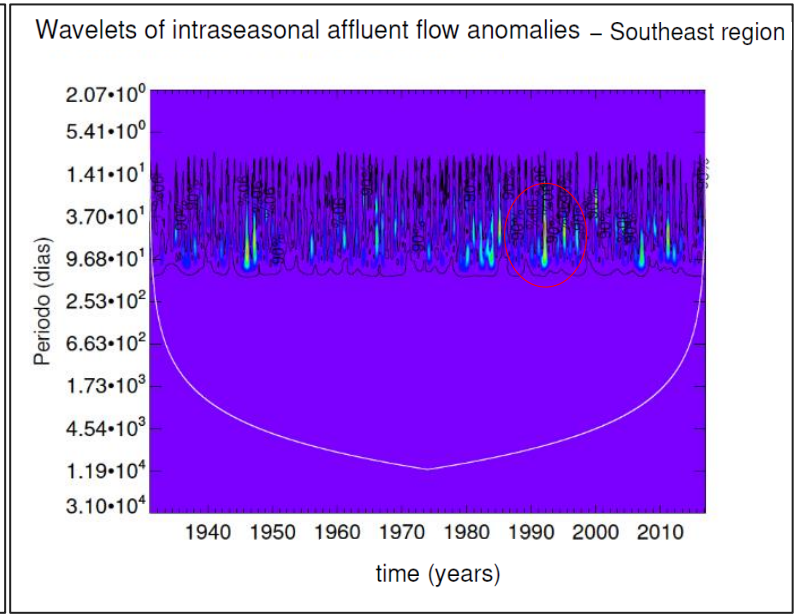
DATA AND STUDY REGION

Five reservoirs were chosen, one for each region of Brazil, this being the most important in each region.

Data	Source	Period
Daily Affluent Flow (m^3/s)	National Water Agency (ANA)	1931 - 2016
Daily MJO Index	Bureau of Meteorology (Australian Government)	1974 - 2016
Daily Precipitation (mm)	Brazilian Global Atmosphetic Model (BAM)	1990 - 2016

ANALYSIS AND DISCUSSION OF RESULTS





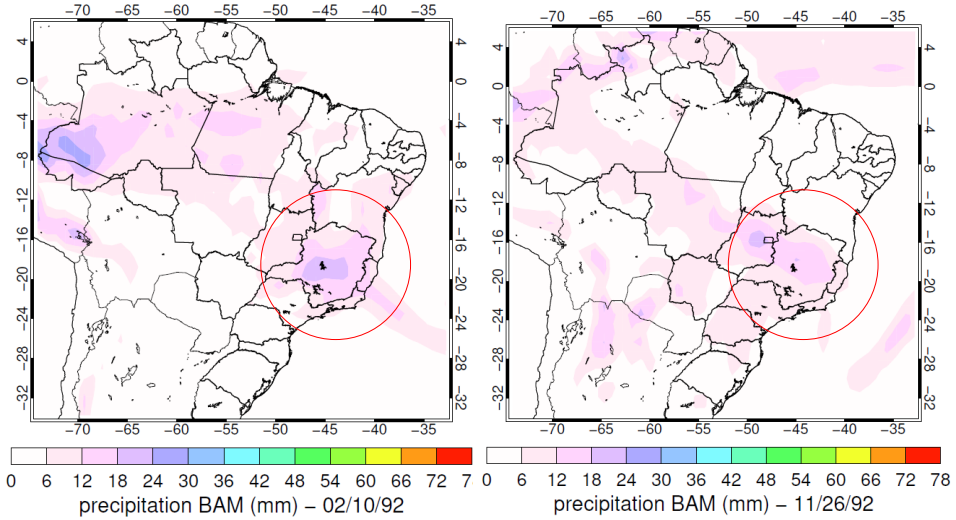
Years of highest energy signature x years of maximum positive anomaly affluent flow

Year of maximum positive and negative intraseasonal anomalies of the affluent flow X Predominant phase of the MJO for the period from 1990 to 2016.

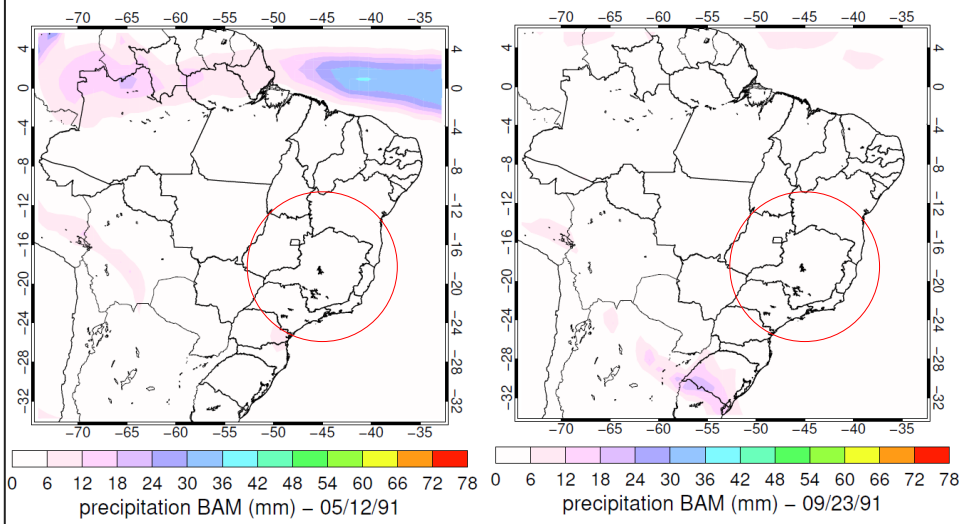
Region	Maximum positive anomalies		Maximum negative anomalies	
	Year	Predominant Phase of MJO	Year	Predominant Phase of MJO
Southeast	1992	1	1991	8

ANALYSIS AND DISCUSSION OF RESULTS

PRECIPITATION SIMULATED BY THE BRAZILIAN GLOBAL ATMOSPHERIC MODEL (BAM)



Precipitation simulation map (1992) - maximum positive anomaly in the SE region - predominance of phase 1 of the MJO



Precipitation simulation map (1991) - maximum negative anomaly in the SE region - predominance of phase 8 of the MJO

CONCLUSION

- There is a relationship between **low intraseasonal activity** and the **non-occurrence of extremes of positive flow anomaly**. This relationship is of fundamental importance, since it **associates** the variability of the flow with the MJO;

- It was possible to associate, through the MJO index, that there is a predominance of **phase 1** (**phase 8**) of this oscillation in years of **extreme positive** (**negative**) intraseasonal anomalies of inflow;

- The BAM Model **satisfactorily represented** the precipitation in the phases of interest of the MJO, associated with the years of greater positive and negative anomalies of influent flow.

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Thank you for your attention!

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