PROGYSAT

Projet de coopération Régionale d'Observation des GuYanes par SATellite

Water resources on the Guyana Plateau: sensitivity and evolution

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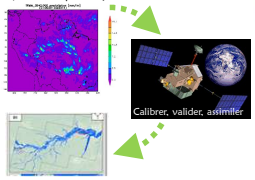
Pour caractériser la sensibilité des ressources en eau du plateau des Guyanes et évolutions possibles …

Building on past projects

GUYAMAPA (2007-2013) Project

Benefit from advances in multi-source data integration for hydrological modeling

Spatialized input data
(rainfall, evaporation)



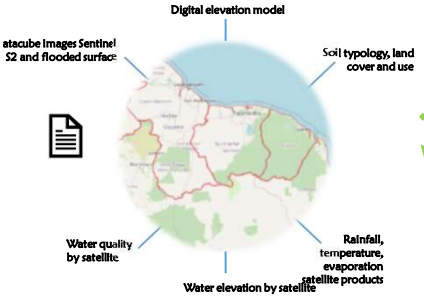
Spatialized control variable
Water extent, humidity, total water storage

Seeking complementarity with ongoing projects

To contribute to PROGYSAT's goal of becoming a hub for cross-border cooperation around SEAS-Guyana, the link with the Bio-Plateaux project and ongoing actions between IRD and OTCA (Amazon Cooperation Treaty Organization) form the basis of our actions.

Compile a database

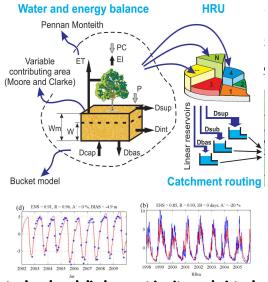
Spatial data and documentation



This database is the result of methodologies developed in partnership with Brazilian institutions over the last decade for the spatial observation of continental waters and their assimilation into hydrological modelling.

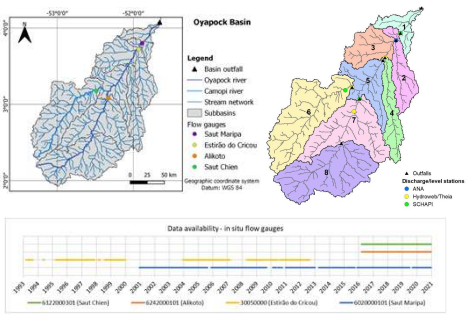
Partnership with institutions in French Guiana and Brazil (Univ. Guyane, Univ. de l'Etat d'Amazonas, Univ. de Brasilia, Inst. National de Recherches spatiales, Inst. de Sciences et Technologie de l'Amapá, Office de l'eau)

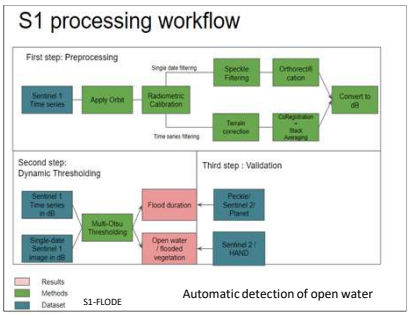
Hydrological modelling



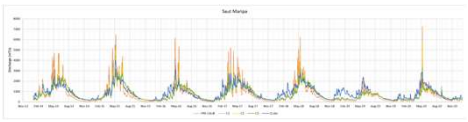
Water level and discharge at in situ and virtual gauges

A methodology based on doctoral work conducted by R. Paiva and A. Paris (Paiva et al, 2013, Paris et al., 2016). The work was conducted in interaction with ongoing projects involving the startup hydro-matters, of which A. Paris is co-founder and CEO.
The modeling products will feed the database.





Discharge simulation at Saut Maripa



METRICS	FULL SIMULATION PERIOD	NOV-DEC-JAN	FEB-MAR-APR	MAY-JUN-JUL	AUG-SEP-OCT
NSE	0,65	0,04	0,17	0,22	0,17
KGE	0,79	0,14	0,55	0,59	0,75
PBIAS	-12,55	-40,50	-37,09	+1,92	+19,35
ΔVolume	-2,2E+10	-8,3E+09	-2,0E+10	+1,6E+09	+4,2E+09

Detection of open water in the city of Paramaribo