



***WEEKLY SOLUTIONS OF GPS  
PERMANENT STATIONS IN SOUTH  
AMERICA***

**Sonia Costa - IBGE**

---

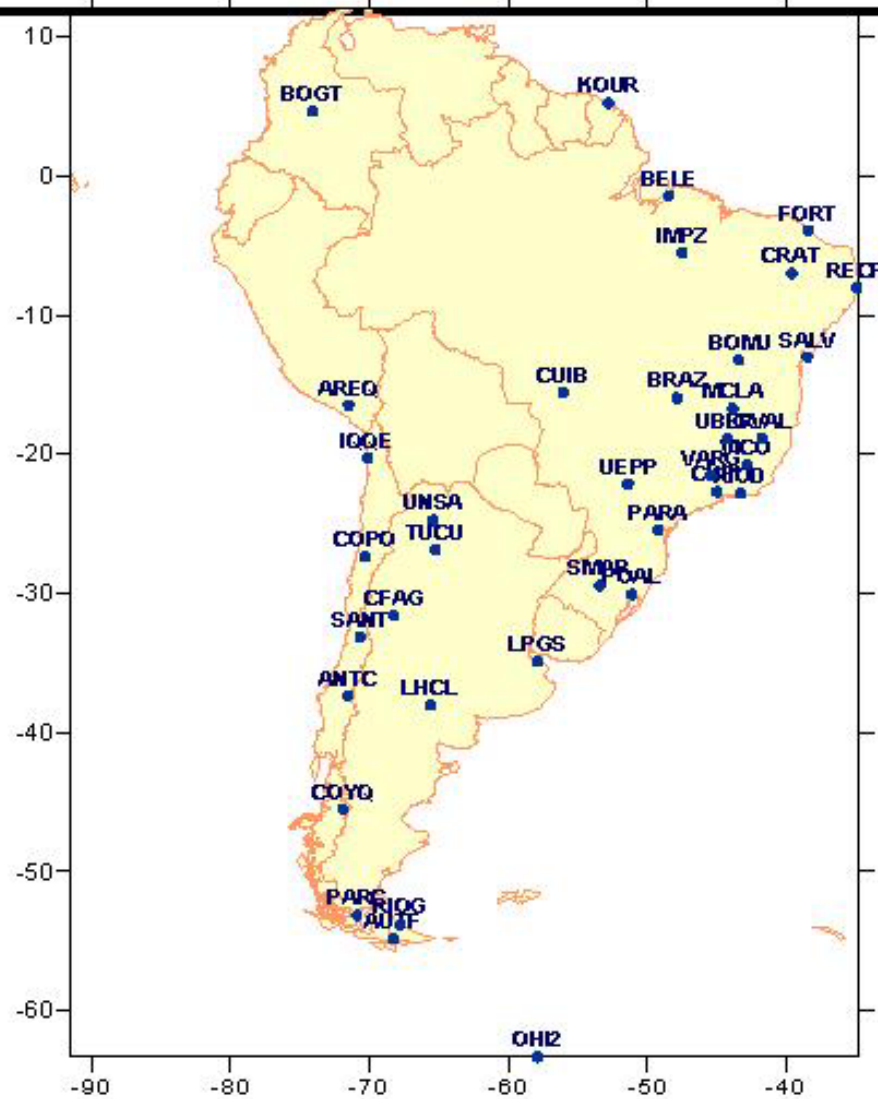
## ***Information about processing***

- **Bernese 5.0 BPE (Bernese Process Engine), under Windows NT**
- **Sampling rate of 15 or 30 seconds (IGS)**
- **Orbits and Earth Rotation Parameters: IGS combined (SP3 and ERP files);**
- **Phase center antenna variation: NGS and IGS**
- **Antenna heights were corrected to ARP (Antenna Reference Point)**

# Processing Strategies

<b>Solutions</b>	<b>Options</b>
<b>Mode</b>	<b>Daily sessions</b>
<b>Observations</b>	<b>double differences, observable L3 (ionosphere free, linear combination of L1 and L2)</b>
<b>Strategy forming baselines</b>	<b>OBS-MAX</b>
<b>Sampling rate</b>	<b>30 and 15 sec.</b>
<b>Elevation cut off angle</b>	<b>10 degrees</b>
<b>Elevation weighting</b>	<b>Cos(z)</b>
<b>Troposphere model</b>	<b>Estimated in the first run of GPSEST</b>
<b>Trop. zenith delay</b>	<b>Every 2 hours (12 corrections)</b>
<b>Mapping function</b>	<b>Niell (wet component)</b>
<b>Ionosphere model</b>	<b>Not applied</b>
<b>Ambiguity resolution</b>	<b>QIF (Quasi Ionosphere Free) + GIMs\CODE maps</b>
<b>Ocean Loading</b>	<b>Not applied</b>
<b>Reference Stations</b>	<b>BRAZ</b>
<b>Results</b>	<b>Daily SINEX solution (free network solution), combined in weekly solution</b>

# Network Configuration



## WADGPS Service

- IBGE signed a 4-year project with Canada
- The Brazilian geodetic infra-structure (RBMC) will be modernized, including the establishment of a real time WADGPS service in Brazil
- IBGE is looking for partners in the continent to provide additional real time GPS stations with atomic clock to the network; as a result, the partners will have access to WADGPS corrections ( $\sigma_{95\%} < 1\text{m}$ )

## Conclusion

- IBGE is ready to contribute to SIRGAS WG I as a centre for continuously processing permanent GPS stations in the continent
- IBGE is proposing a partnership in the continent to establish a WADGPS service