

Chilean atmospheric contribution & Land site: PAPOSO 25°0'S, 70°27', 700 ma.s.l.

Site



- **ATM_CL: overview**
- **PAPOSO**
 - Main features
 - Measurements
 - Issues:
 - Energy
 - Housing/containers
 - Permits/contacts

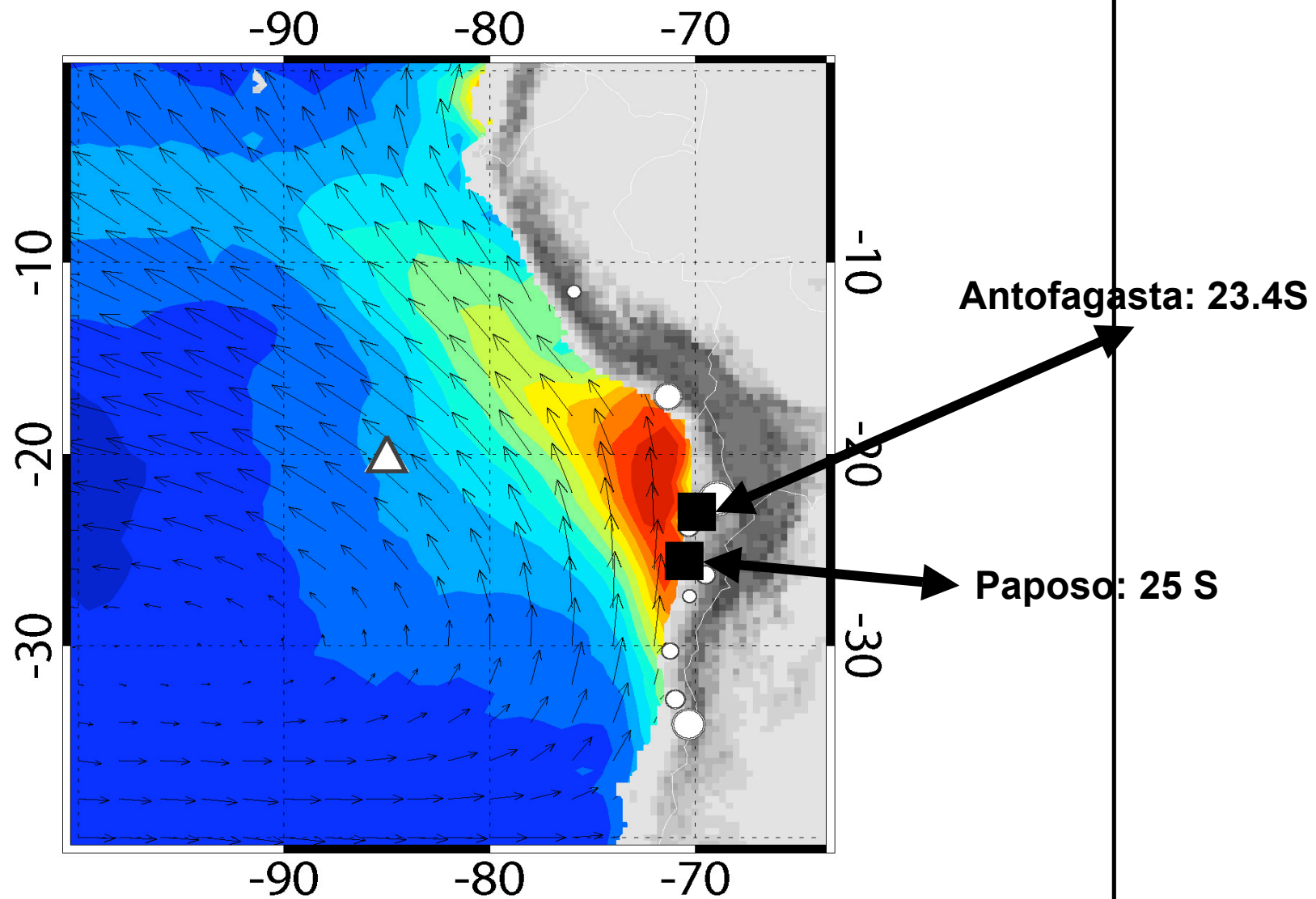




Our aims

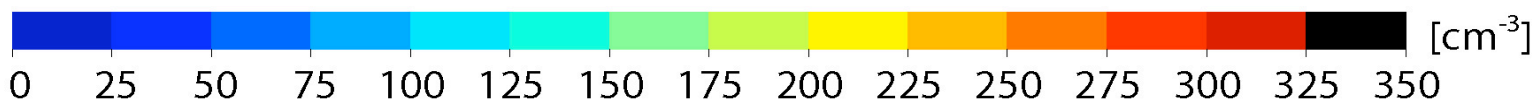
- **Understanding of the dynamics of the coastal LLJ system and its relationship with low-cloud cover variability and coastal upwelling (*R. Garreaud, J. Rutllant, R. Muñoz*)**
- **Increasing our understanding of how anthropogenic and natural aerosols, mainly sulfate aerosols, interact with the persistent Sc deck in the coastal areas of Central and Northern Chile (*A.M. Córdoba, L. Gallardo*)**
- *Understanding offshore transport of coastally upwelled water by mesoscale processes and the coastal transition zone jet off Chile and its role on the mesoscale (meandrings) (*O. Pizarro*)*

SON 2001-2004



Antofagasta: 23.4S

Paposos: 25 S



Urban areas

- Antofagasta ~300 k inhab
- Taltal ~ 12 k inhab
- Mejillones ~ 10 k inhab
- Calama ~ 140 k inhab

Smelters (2006, kgS/s)

- Chuquicamata ~ 1.2
- Alto Norte ~ 0.4
- Potrerillos ~ 0.9
- Paipote ~0.3

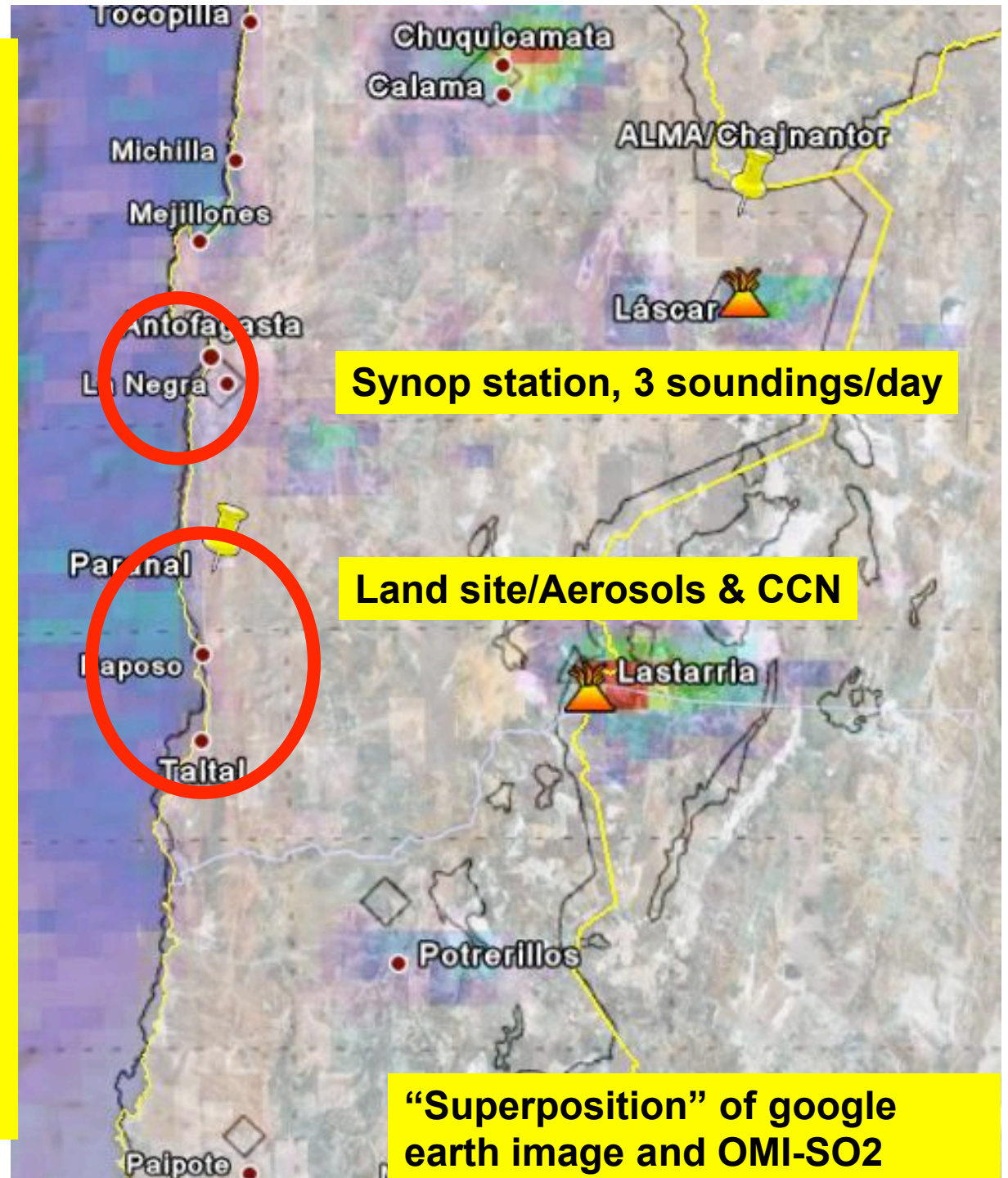
Power Plants (2005, kgS/s)

- Mejillones (2) ~ 0.9
- Tocopilla (2) ~ 0.5
- Paposo ~0.00005**

Volcanoes (kgS/s)

- Láscar ~ 14
- Lastarria ?

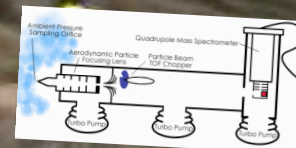
Paranal & ALMA are astronomical observatories



LAND SITE



- Objectives:
 - Identify the origin and composition of the aerosols that act as CCN in the coastal Sc
 - Characterize the local and meso-scale circulations, and the evolution of the coastal MBL
- Instruments
 - CVI(s), AMS (?), photometer(s), soundings, ceilometer, MOUDI(?) ($\Sigma \sim 20\text{-}25$ kW)
 - Models: WRF-Chem; ECMWF+MATCH; CCATT-BRAMS (?)



POWER PLANT

Paposo



Issues



- Energy supply...20-25 kW required
 - Provided by the power plant? Expensive and lengthy
 - Propane generators?
 - **Diesel generator**
 - **Σ~6-8 kUSD**
- Housing
 - Repair of shelter in place
 - **Container(s)**
 - **Σ~2-3 kUSD**
- Permits
 - Under way

