

Atmospheric Impact of rocket Launchers



Takes about
10mins for
whole
atmosphere

ESA project

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SILAM winter school 2013

Aim

- Use SILAM to study the effect of ESA rocket launchers on the atmosphere

Developments required

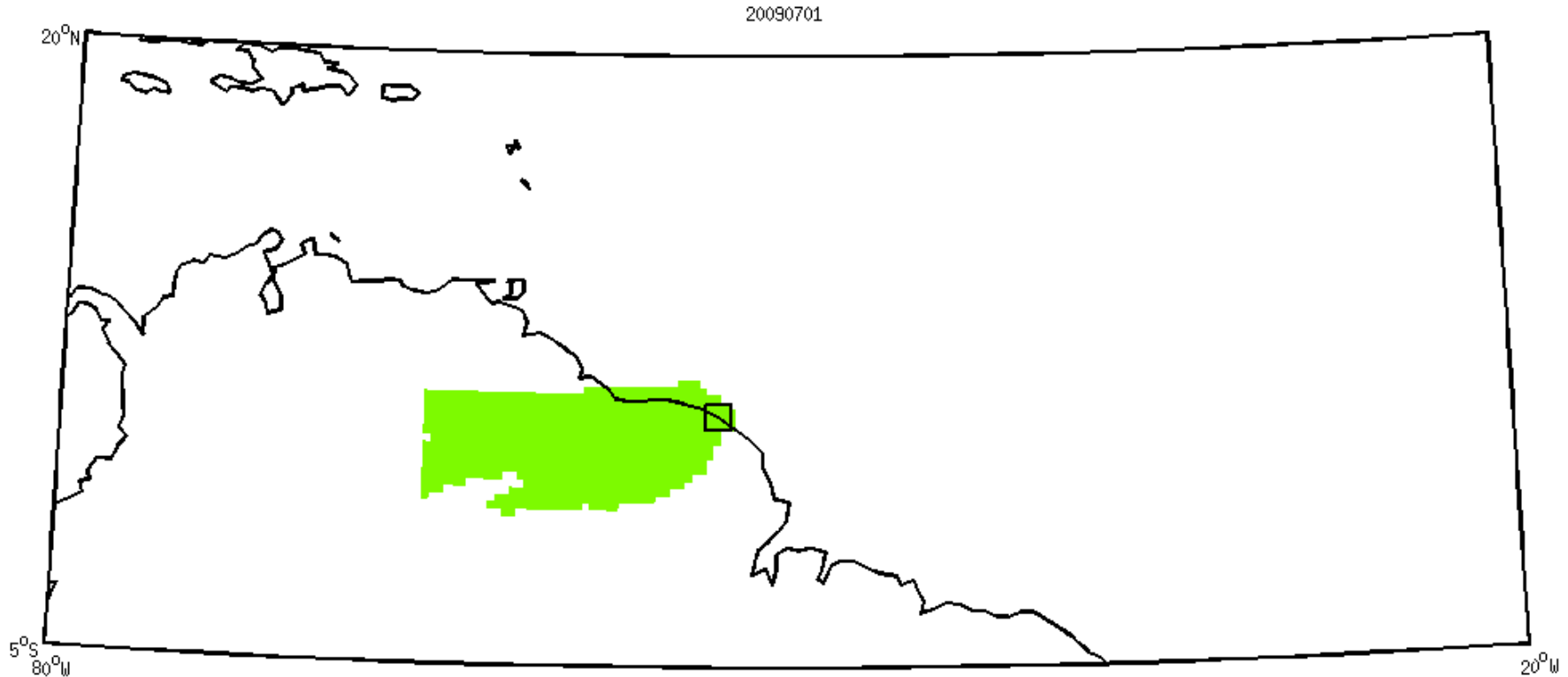
Use SILAM in the stratosphere

- Julius's Dynamics developments (DONE)
- New chemistry scheme for stratosphere
 - Under development (Virpi)

Validation

- New SILAM uses always require validation
- Can we observe chemical changes in satellite data?
 - ozone change (OMI, GOME)?
 - AOD (MODIS)?
 - Comparison dependent on timing of satellite pass
- Make some totally PASSIVE runs to estimate contamination area (ignore buoyancy, settling and chemistry)

An example 2009 ESA launch



Total contamination within 24 hours from launch (column 0-60 km)

-> Next step – define sensible units (e.g. km/m² in stratosphere)