DE LA RECHERCHE À L'INDUSTRIE

A few remarks about the computation of the Galactic noise contribution

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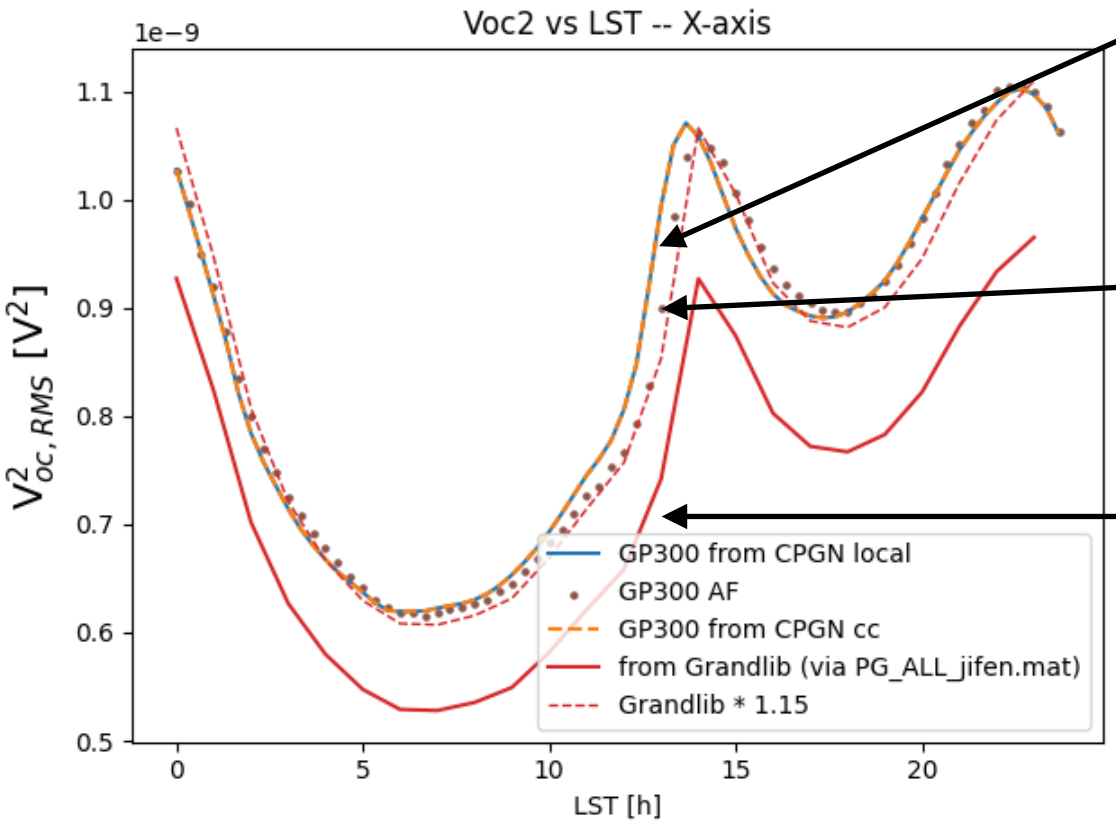
Motivation

- For the denoising project, I started looking in details into the generation of the Galactic noise contribution
- Really new to the subject
- Huge thanks to Stavros and Xin Xu, who always replied to my very naive questions!

Computation of Vout



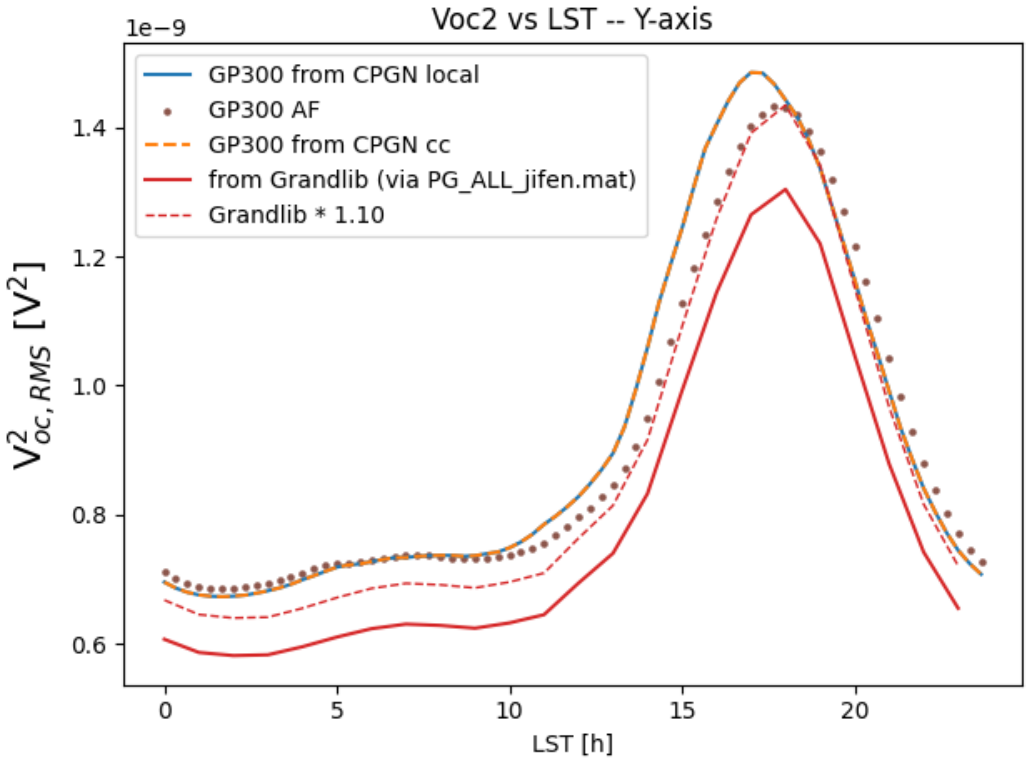
Computed with Compute_Plot_Galactic_noise.py
- One on my laptop, with a « hacked » Grandlib
- One on CC with the real grandlib

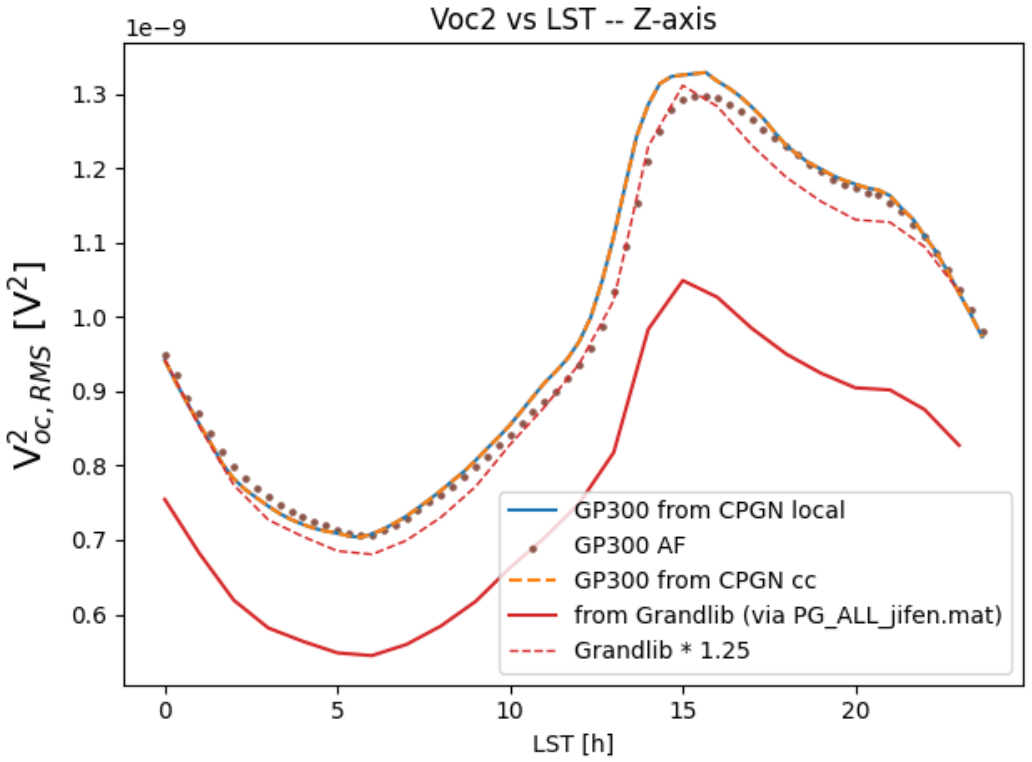
These lines are computed with the (new) antennas effective lengths, and LFmap_short.npy Galaxy temperature map

Dots: Arsène's computation.
In principle, same inputs as the CPGN lines.
Small discrepancies, probably due to interpolation and/or sky integration of sky maps.

Full red: Computed with Grandlib.
- From the PG_ALL_jifen.mat file.
- Default mode for Galaxy noise in Grandlib

Same thing for Y and Z





- There are two methods that should give identical results and end up being different by 10-25% at the **power spectrum** level.
- Not too bad! :)

Possible sources of discrepancies:

- Effective length files come from « the Gain ». Could there be an issue there?
- PG_all_jifen.mat is computed with high resolution sky temperature maps. Not the other ones.