

Splinter D Summary

A.Heras/A.Marston

- **Introduction:**
 - Completely different types of spectrometers – good (comparisons), bad (three sets of techniques/info to obtain).
- **HIFI:** wavelengths/freq INTERNALLY generated.
 - Internal generation failure? Some redundancy due to the fact there are two sets of spectrometers – noise correlation technique.
- **PACS/SPIRE:** need EXTERNAL sources (e.g. w/CO lines).
 - For wavelength accuracy of known lines of PACS sources are fine.
 - SPIRE resn is 200km/s at best. So extreme accuracy not needed.
- *There is an overlap region that covers NII line at 205 μ m in all instruments.*

- **Cross-cal line profile checks?**

- PACS grating up/down symmetric line profile distortion.

- Profiles vary with wavelength. Cross-cal very useful.

- SPIRE needs wide lines to see anything (internally okay).

- HIFI has very accurate line profiles.

- **Sources?** Narrow line sources for PACS (<10km/s). Compact for PACS. HIFI internal checks need lines (<1km/s), but can be faint sources.

- AGB stars/Compact HII regions? (also NII line [also PACS leakage checks on filter]/ CII lines).**

•Cross-cal flux checks.

- Clearly useful across the 3 instruments (can be combined with above)
- Sources? How much (157-200 mic to be covered – certain spectral ranges, 4-5 lines) All 3 instruments. But then to longer wavelengths SPIRE/HIFI. For SPIRE/HIFI a few tens of km/s for source line width. 2-3 point sources with the above needs. PACS/SPIRE/HIFI cooperative activity in PV/science demo phase.

•Use of planetary models for line strength/wavelength/profiles?

- Backup? If problem with transference to shorter PACS wavelengths.
- Report on line flux strengths/profiles accuracies for planetary models?

Actions Regarding Line Flux/Profile Cross-Calibration

- *AI_1*: Leen Decin (via Bart) to provide 20-30 CO line sources/ flux and profile predictions that are useful for PACS (also needs to go out to SPIRE wavelengths). To pass to HIFI Calibration Group (Michael Olberg, cc to SPIRE, Ed Polehampton).
 - 2-4 sources (preferably in the CVZ) identified by next HCalSG meeting. These to be placed into each instrument's PV plan.
 - Decin list to be made available for inclusion in Cal source DB.
 - Monitoring by HCalSG – in instrument PV activities and info supplied.
- *AI_2*: APM to bring the sources to G. Sandell's attention. Secondary calibrator sources to be used here.