

Herschel Calibration Workshop: Introduction

Anthony Marston, Herschel Instrument and
Calibration Scientist Team Lead, HSC, ESAC.

- WIFI: individual information sent by email for connections to esa-public wireless.
 - We will try to fix individual problems.
- Presentations are set for a given period of time which should include time for questions and some discussion. Presentations to be placed on web site.
- Coffee will be held outside the main presentation room around the times indicated.
- There are other rooms that can be used for further splinters – on request.

- Dinner tonight.
 - At Wok restaurant in Heron City <http://www.wokgarden.com/asianswok>
 - (several other restaurants in the same block).
 - Reasonable price and should be able to take all of us.
 - Will need to arrange cars – sign-up sheet!

- HCalSG meeting on Friday afternoon – in B3. Short agenda already sent around. Should finish in time for afternoon flights.

➤ From last time and to be updated this time:

- **PACS extended emission was left as an issue.** Believed closed, but further updates here. Can we say this is completely done and what needs to be communicated to users?
- **Reduction in photometer errors in scan maps/improvements** – filters/dstripers/external mappers. Which mappers should we go for now? Recommendations?
- **Stellar/asteroid/planetary models.** Feedback from observations and improvements on these models and their usage. All stars okay for calibration? K-band normalization? Asteroid models being used, which, consistency and use outside Herschel, cross-cal?
- **SPIRE extended emission** – zero point assessment using Planck HFI data. This is really doable on a large scale?

➤ Spectroscopy:

- Best practices for data reduction. Including methods of creating final spectra.
- Calibration checks for spectroscopy. Sources used and methods of comparison.
- Beam information (variation with wavelength?). Affect on spectral extractions and flux assessments?
- Pointing effects and mitigations.
- Mapping routines and flux conservance/consistency
- Key areas of errors – external information helps?

➤ Cross-calibration:

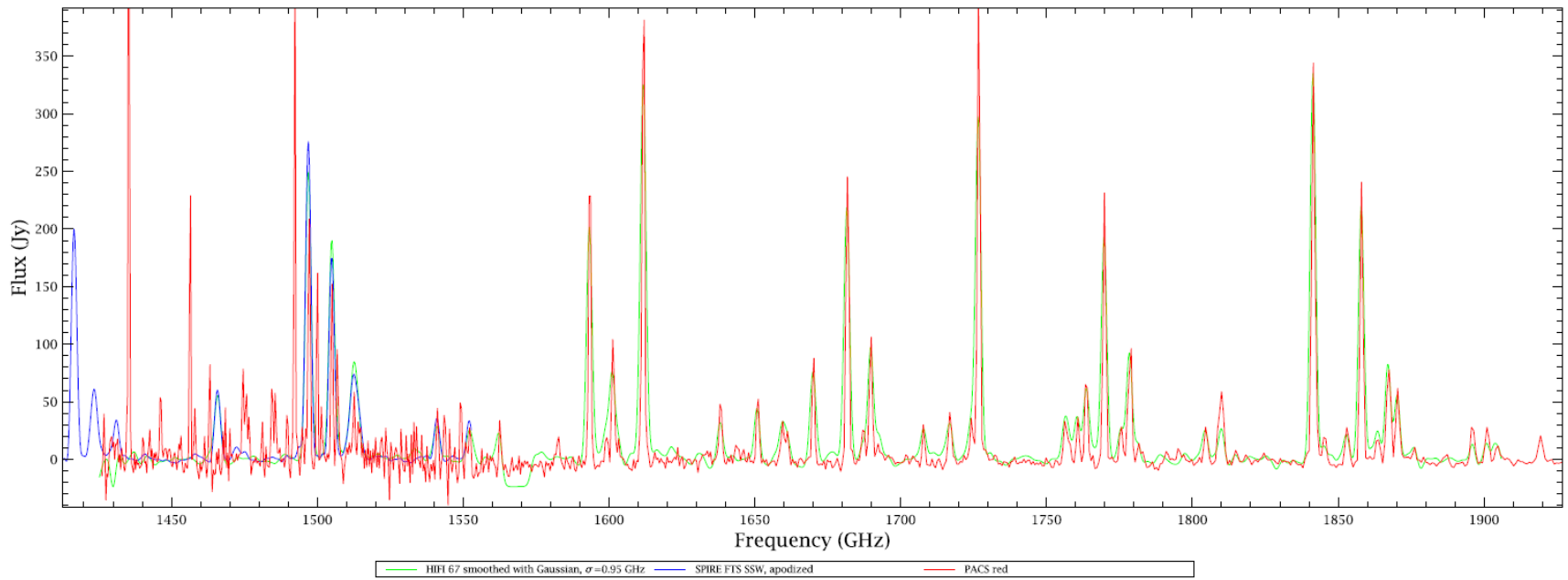
- Use Cases document (HERSCHEL-HSC-DOC-1720, April 2010) gives broad outline of what we should be checking and where feedback may be possible to improve on calibrator models.
 - PACS red leak
 - HIFI coupling efficiency variations
 - Deconvolution/FTS line identification
 - We have identified some of the prime cross-calibration for spectral emission line comparisons especially.
 - Some comparisons to data from other flown experiments such as SOFIA observations can also be useful as that mission progresses.
- Initial results appear in HERSCHEL-HSC-REP-1935, Jan 2012.

➤ Herschel has been and still is a “pathfinder”. There are relatively few windows in the atmosphere that allow measurements across the frequency/wavelength range of Herschel (certain sub-millimetre lines of HIFI are available from the ground, for example). So direct comparisons with ground-based observations are of some, but limited, scope.

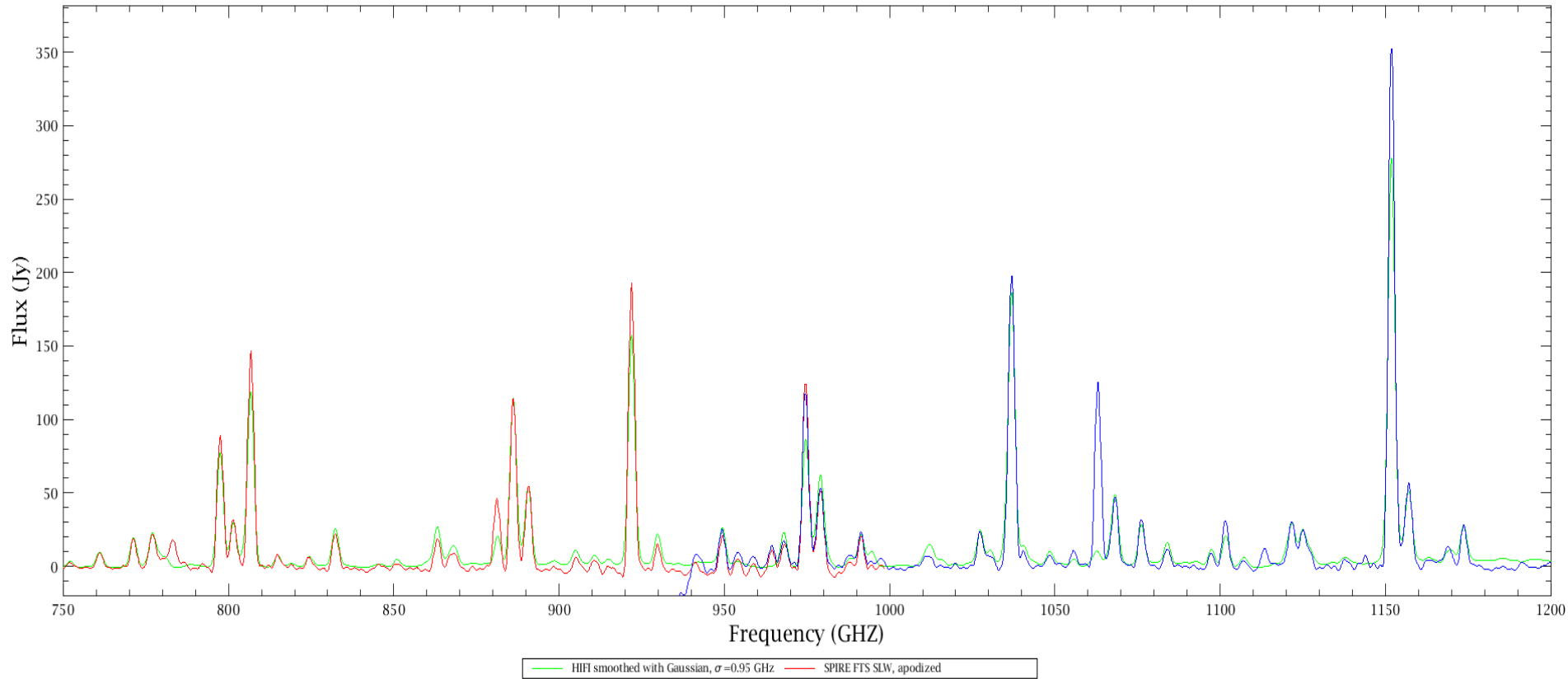
➤ Stellar/Planetary/asteroid Models – a Herschel Legacy:

- Improved knowledge of the models used for calibration purposes (planetary/asteroid/stellar) via feedback from Herschel observations.
- As a by-product we can expect to provide improved calibrator models which may of use to future observatories such as ALMA, SOFIA and SPICA.

IRC+10216 – HIFI/PACS/SPIRE



IRC+10216 – HIFI/SPIRE



DAY ONE



DAY ONE: Wednesday, 18 January 2012 (Plenary -- in room B3)

09:00 - 09.30 Introduction and Goals of the Meeting (Tony Marston)

09:30 - 10:15 SPIRE Spectrometer flux and wavelength calibration (Ed Polehampton)

10:15 - 10:45 COFFEE BREAK

10:45 - 11:40 SPIRE spectrometer calibrators (Ros Hopwood)

11:40 - 11:50 PACS Spectrometer: overview on calibration (Ulrich Klaas)

11:50 - 12:20 PACS spectrometer wavelength calibration: methods (Helmut Feuchtgruber)

12:20 - 12:50 PACS spectrometer spatial calibration and beam efficiencies (Alessandra Contursi)

12:50 - 13:30 PACS spectrometer flux calibration concept (abs flux cal scheme, normalized to tel. background) (Bart Vandenbussche + Pierre Royer)

13:30 - 14:30 LUNCH

14:30 - 14:55 PACS spectrometer flux calibration accuracies (reproducibility, linearity, comparison with photometer) (Bart Vandenbussche + Pierre Royer)

14:55 - 15:15 PACS spectrometer: pointing correction (Johan Olofsson)

15:15 - 15:35 PACS-S Spatial and Spectral Ghosts (Helmut)

15:35 - 16:05 PACS spectrometer unchopped data reduction concept (flux-cal, drift-correction, unchopped vs. chopped flux comparison) (Dario Fadda + Roland Vavrek)

16:05 - 16:30 COFFEE BREAK

16:30 - 17:00 HIFI flux and wavelength calibration: methods (Volker Ossenkopf)

17:00 - 17:30 HIFI flux and wavelength calibration: implementation (David Teyssier)

17:30 - 18:00 Continuum measurements in HIFI observations (Pat Morris)

18:00 - 18:30 KP User Feedback (Fabrice Herpin)

20:00 -- DINNER at Wok restaurant in Heron City [Wok Garden](#)