



Introduction to SPIRE Useful Scripts: Background Subtraction

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(On behalf of the SPIRE ICC)





Goals

- Useful SPIRE scripts in HIPE.
- Demo on using the background subtraction script
 - To improve continuum flux.



Useful Scripts

Scripts Window Tools Help

SPIRE Useful scripts

- Photometer Astrometry Correction
- Photometer Baseline Removal and Destriper
- Photometer Bolometer Finder
- Photometer Calculate Ephemeris SSO Position
- Photometer Map Merging
- Photometer Solar System Object Motion Correction
- Spectrometer Array Footprint Plot
- Spectrometer Background Subtraction
- Spectrometer Line Fitting
- Spectrometer Cube Fitting
- Spectrometer Thumbnail Mosaic Plot
- Spectrometer Convolve Spectrum
- Spectrometer Noise Estimate
- Combine PACS and SPIRE spectra

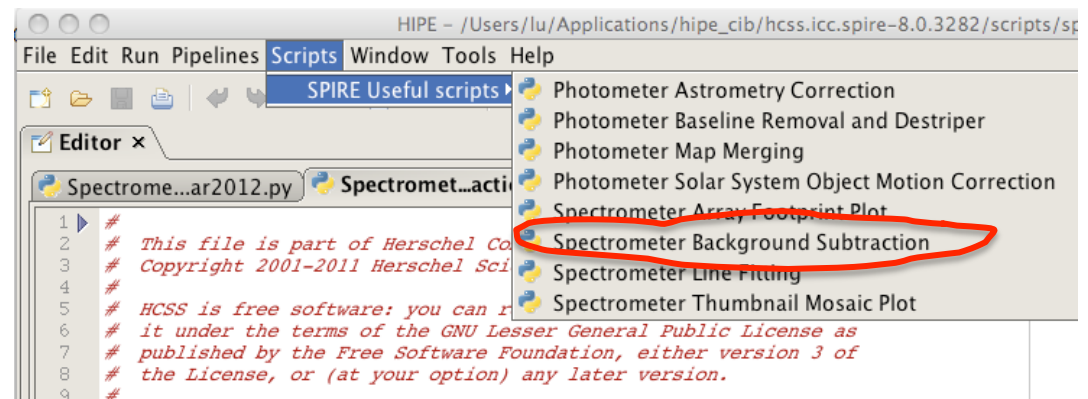
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distributed in the
OUT ANY WARRANTY;
ABILITY or FITNESS
er General Public*



Remove Residual Telescope Emission

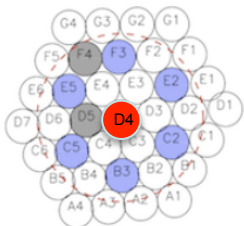
- Two practical ways:
 - Subtract an observed **Dark Sky** from the same observational day, as close in time to your observation as possible, which is processed in the same way as your own observation.
 - A list of dark observations can be found at:
<http://herschel.esac.esa.int/twiki/bin/view/Public/SpireDailyDarkObservations>
 - Subtract a **mean or median spectrum** from surrounding detectors in case of a point source observation:
 - We will demo how to do this using a user script available in HIPE.

A script for doing both these corrections is available inside HIPE:

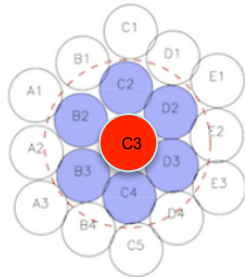


Residual Telescope Emission Removal: Using Surrounding Channels

SSW

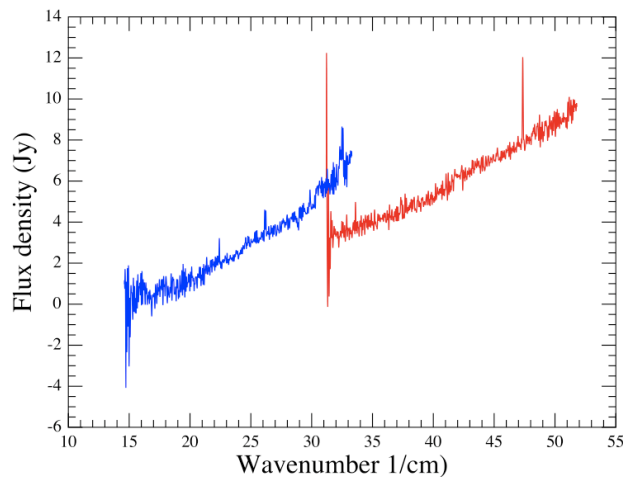


SLW

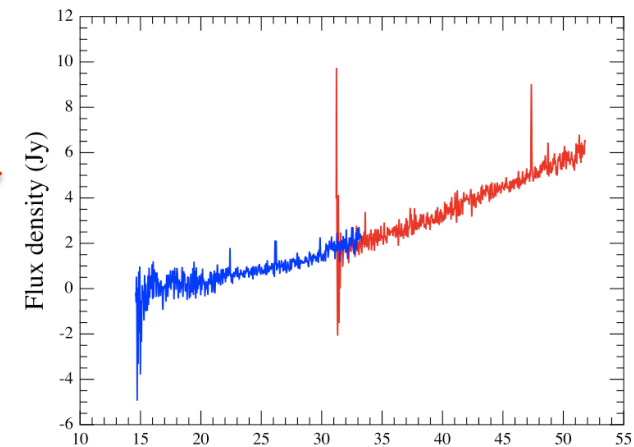


- Using a median spectrum from the **co-aligned detectors** as the residual telescope spectrum.
- This (or a polynomial fit to it) is then subtracted from the spectrum of the **central detectors**.

ESO099-G004: SSWD4 + SLWC3

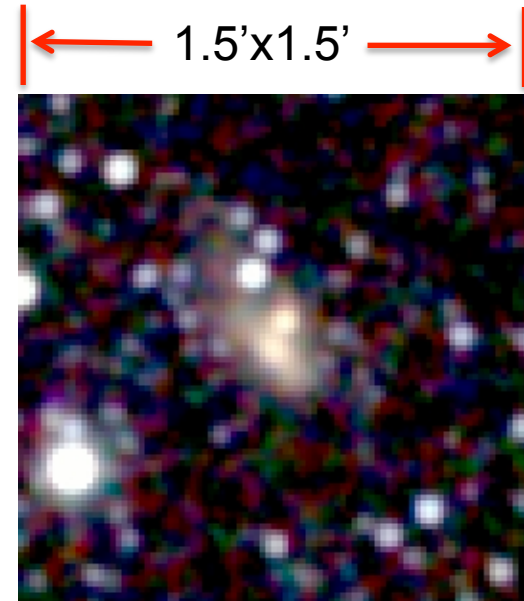


ESO099-G004: SSWD4 + SLWC3



Demo on Improving Continuum Flux

- The sample observation we will use is of the IR luminose galaxy ESO099-G004 from OD879 (program: OT1_nlu_1; HR; 40 repeats):
 - OBSID = 1342230419.
- The dark for OD879 is a 55 repeat observation in CR mode:
 - OBSID = 1342230416.

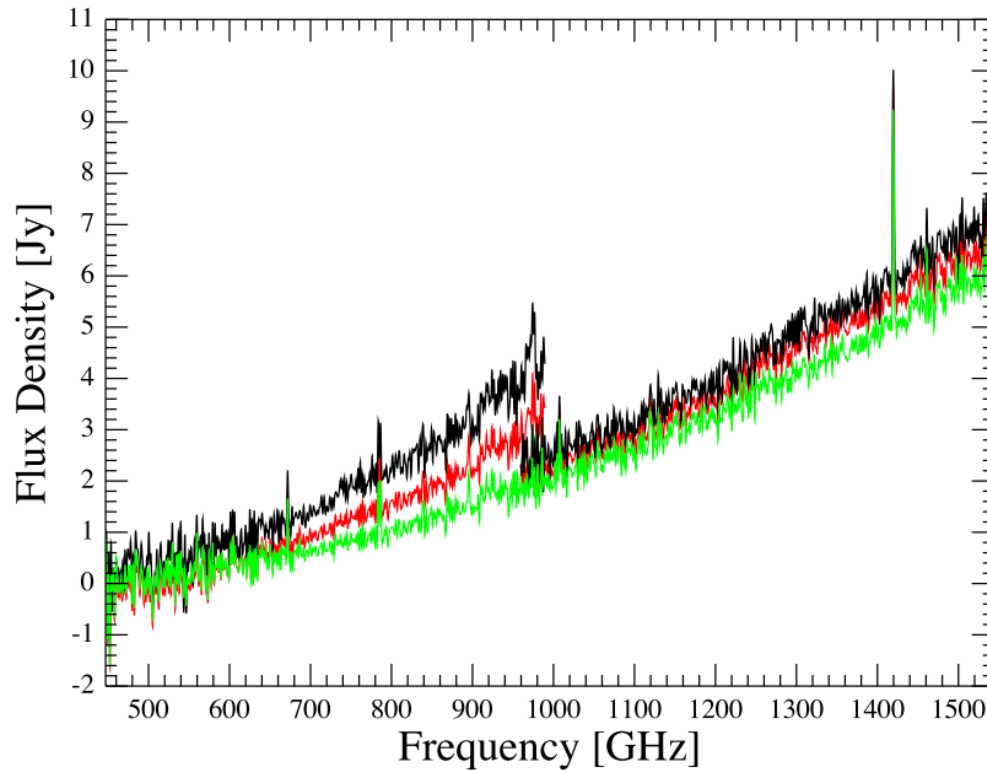




Demo on Improving Continuum Flux

0x5000CF93 (OD 879)

ESO099-G004, 40 reps



Red: Pipeline ver 11.

Black: Dark subtracted.

Green: Surrounding channel subtraction.

