Survey Tools Discussion

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Discussion topics

- Data processing & pipelines

- Source finding

- Physical interpretation & modelling

- Data bases & statistical analysis

Data processing & pipelines

- Automated (?)
- Parallelisation key e.g. multi-MS data & mpicasa
- RFI identification & mitigation (e.g. AOFLAGGER, RFInder)
- Bandpass calibration & spectral dynamic range (off axis?)
- Calibration in general (direction dependent)
- Continuum subtraction (approaches)
- Data quality assurance tools
- Data storage (spectral/spatial resolution)

Source finding (continuum, lines)

- Automated …
- Continuum identification, parametrisation and spectra extraction (e.g. SHARPener)
- Mini cubes around extended emission
- Optimisation of averaging over extended emission
- Automated line detection (e.g. FLASHfinder)
- Reliability (very important!) – noise characterisation
  - Follow up for verification (different telescopes, ALMA, GMRT)

Physical interpretation & modelling

- Move away from "multiple Gaussians" approach
- Physical models (MoD_Abs; also Gallimore et al. 1999)
- Are disks sufficient?
- Is the bulk absorption coming from a disk?
- Use other information to inform our models
- Can we extrapolate from nearby galaxies?
- Will this bias our results given evolution

Statistical analysis & data bases

- Repositories of HI detections & non-detections (e.g. CHAD)
- Spectra publically available
- FITS or ASCII probably ok
- RMS spectra should be used for wideband data and stored as well
  - RFI dependent flagging will change RMS in different directions
- Value added catalogues and cross-referencing other surveys
  - Optical spectroscopic information
- What statistical approaches are people thinking about?