200Mm Time~Distance Pipeline

Status 11/5/2007
200Mm Time-Distance

- **Lead** – Tom Duvall
- **Task** – From Dopplergrams generate deep-focus synoptic flow maps and sound-speed perturbation maps.
- **Input** – Dopplergrams and inversion kernels
- **Level 2 Output**
  - 200Mm Synoptic flow maps (4 images per timestep) – data saved in database, cadence is 1 d., size is some MB ea. image
  - Travel-time maps – data saved in database, cadence is 1 d., size is some MB ea. image
200Mm Time~Distance (cont’d)

- **Code**
  - `trackm` (Rick) – tracked tiles from Dopplergrams
  - `<filtering>` (Junwei) – phase speed or other filters
  - `<cross-covariance>` (Duvall) – Deep-focusing geometry
  - `<travel-time fitting>` (Junwei/Duvall) – Travel-time fits; either same as 30Mm, or Gizon-Birch method
  - `<deep-focus kernel calc>` – Deep-focus kernel calculation; ray kernels at present.
  - `<spherical-geometry inversion>` – Calculate inversions using spherical geometry; Junwei is developing this
200Mm Time-Distance (cont’d)

- Processors – could be pretty expensive
- Status
  - Fortran filtering exists, needs module
  - Cross-covariance IRAF implementation exists, needs testing, needs module
  - Fortran travel-time fitting code (both 30Mm version and Gizon-Birch version) needs fine tuning, needs a module
  - Deep-focus kernel-calculation algorithm does NOT exist
  - Spherical-geometry inversion algorithm does NOT exist (Junwei is working on this)
- Plan/Issues
  - Need schedule
  - Need processor estimates
  - Need to figure out linking of IRAF output with DRMS libs (DRMS metalibs exist)