James Allan – Analysis software

- Currently v1.32
- Added JMS functions (just loads)
- AB correction – assumes perceived AB is proportional to measured flowrate
  - Function of both sensitivity and mass entering instrument, so have to do both AB and flowrate corrections or it’s not correct
  - Plot AB vs measured flowrate during time when sensitivity not changing much – should be linear but not directly proportional
  - Vary flowrate and measure AMS flowrate and AB to determine relationship
    - ‘Flowrate offset’ is intercept on x axis and can use that to correct
  - Roya/Shane found fairly constant slope but changing intercept
- Assumes 1 velocity calibration for entire campaign (or file)
  - May change in future
- Mask – selectively choose runs
  - Wire, switching inlet, events, etc.
  - Setruninterval changed (in next version)
    - Can use preset mask for particular time period
    - The new part is that can do it for averages
  - Currently, can make mask and type in where run number is to do averages
  - Need to make standard masks (e.g., wire pos’n, valve, etc)
  - Useful to do masks based on other variables (e.g., ozone, wind direction, etc.)
  - Look up help for interrogation sign in Igor (?:)
    - Single line statement can type in
      Wave w = wave0
      w = w[p] > 80 ? 0 : 1
  - Remap time base – Misc tab
    - Can do either wave or matrix (for SDs)
    - Waves to remap: org, ulog_msig_org
    - Time period: 11/7/2004 00:00 – 11/7/2004 23:00
    - AMS time stamp is end, but most groups expect start (this is what will be output, not the original data)
      - Remap in Igor for image plots has to be center
    - For size-resolved have to specify diameter bins
      - ‘default’ 20-2000 w/ 40 bins evenly spaced in log space (log 1.05 = 0.02???)
        - by choosing number of bins/decade you choose effective resolution
        - 20 bins/decade is good default
      - ‘dM/dlogD’ unchecked get ug/m3/bin
      - ‘Use Interpolation’ normally don’t use can get artifacts
        - Can be useful for higher frequency data to avoid step function, but may not be scientifically valid??
      - Selectively remap by using mask waves
- Creates new data folder ‘Remapped’ w/ new waves
  - Org_example_mask, ulog_msig_org_example_mask, d_bins
  - Uses Igor’s x-scaling function, doesn’t make new time wave (yet, soon to come?)

  - Frank Drewnick – Instrument Data Averaging Toolbox
    - Select actual sample time, not just time stamp

Does remap, averages, gaps, detection limits, correlations