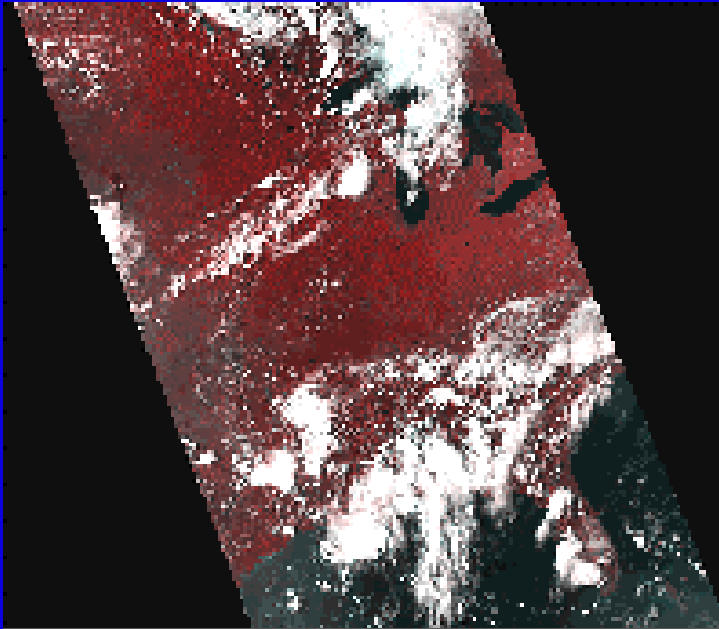


Heritage and Future:

Transitioning from AVHRR to MODIS



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Background

- AVHRR: heritage data (1989 – 2005)
- MODIS: present and future (2000 – 2007)
- Data Applications
 - Global change
 - Land use
 - Land cover change
 - Global mapping



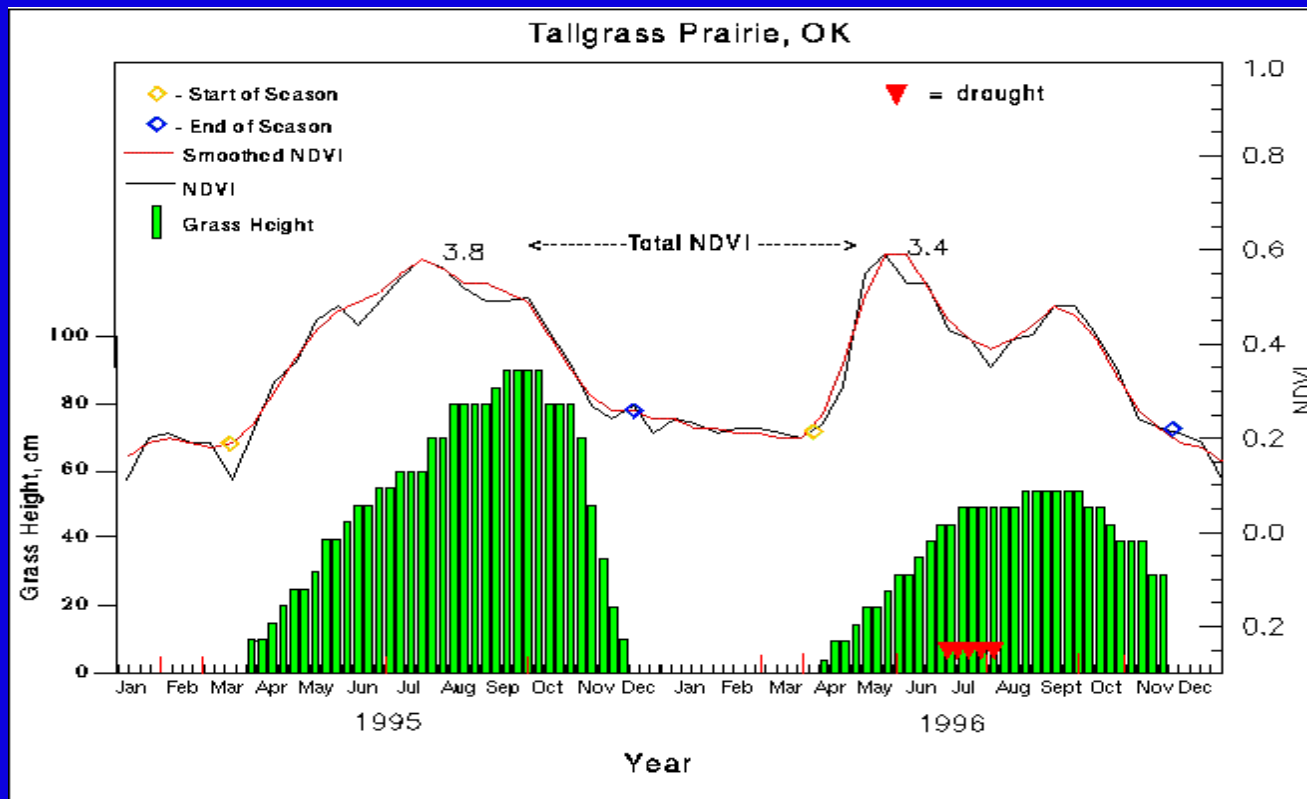
Background

- AVHRR
 - 1 km resolution
 - Less than optimum data quality
 - Excellent time series
- MODIS
 - 250m, 500m, 1km resolution
 - Improved spectral resolution (36 bands)
 - State of the art calibration and geometry

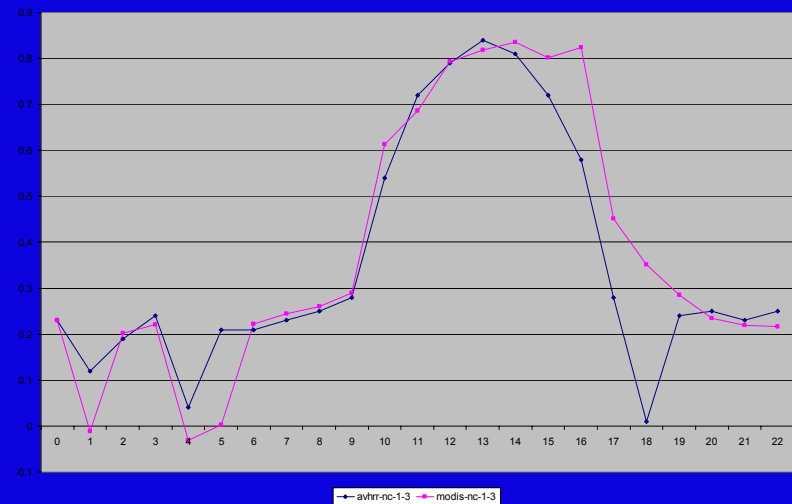
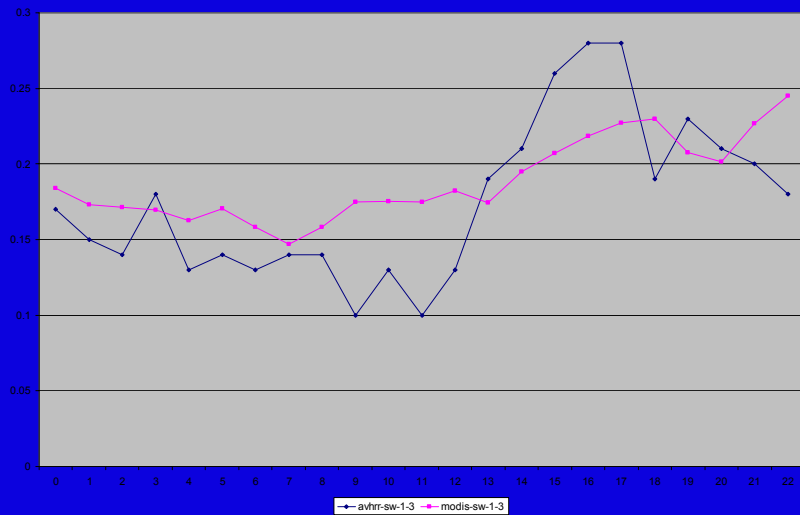


Normalized Difference Vegetation Index

- Seasonal metrics derived from time-series



Differences between the sensors



Planned activities

- Characterize Differences
- Fourier Analysis
 - Can our proposed adjustments be made?
- Regional analysis and statistical characterization
 - Statistically adjust portions of one curve to match the other
- Band-level analysis
 - Sensor cross-calibration



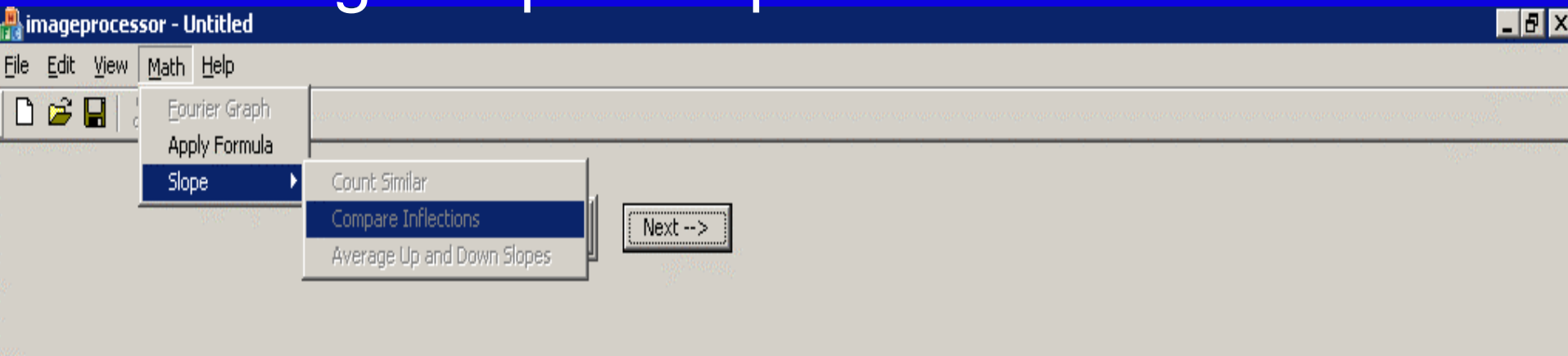
Progress

Software that lets users visually analyze the data curves

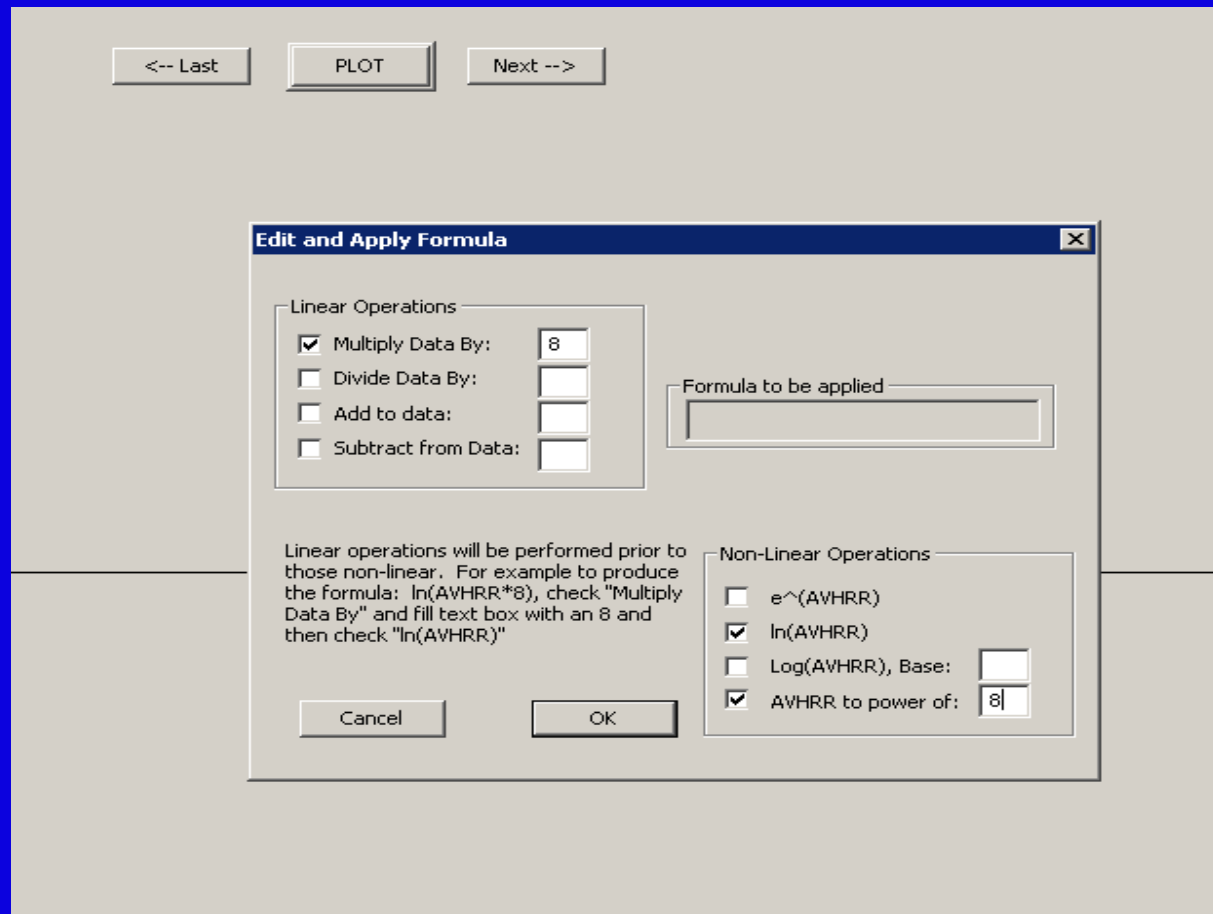


Progress

- Fourier Transform graphs
- Counting similar slopes in the data sets
- Checking for inflections that occur at the same time
- Average slope comparisons



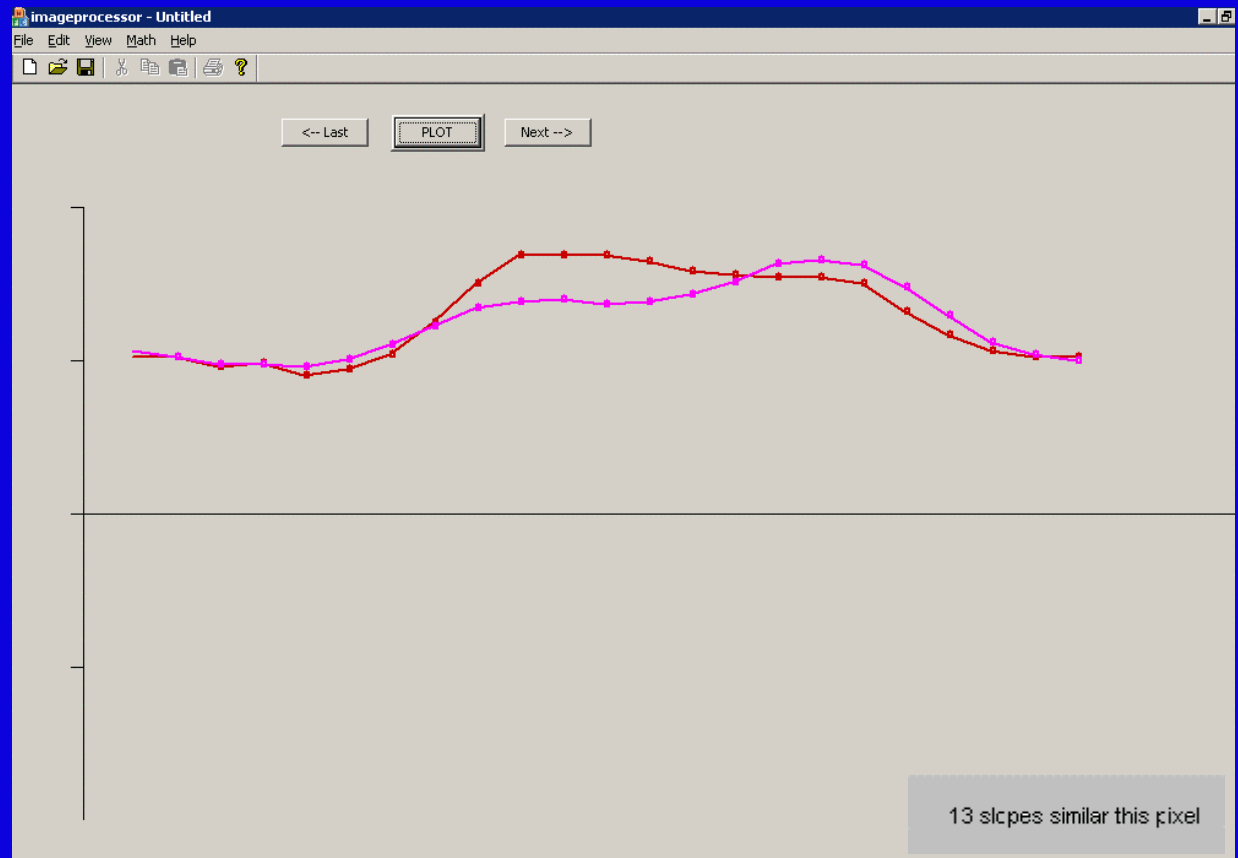
Transformation Visualization



Preliminary Results

- AVHRR and MODIS slopes

On average about there are 10 similar slopes per pixel and 50 percent of the slopes per region are similar. They span from 46% to 51%.



Current Impressions

- Two data sets are more similar than expected
- Tool development will accelerate characterization of differences
- Database development of overlap period is critical

