

## Purpose of the project:

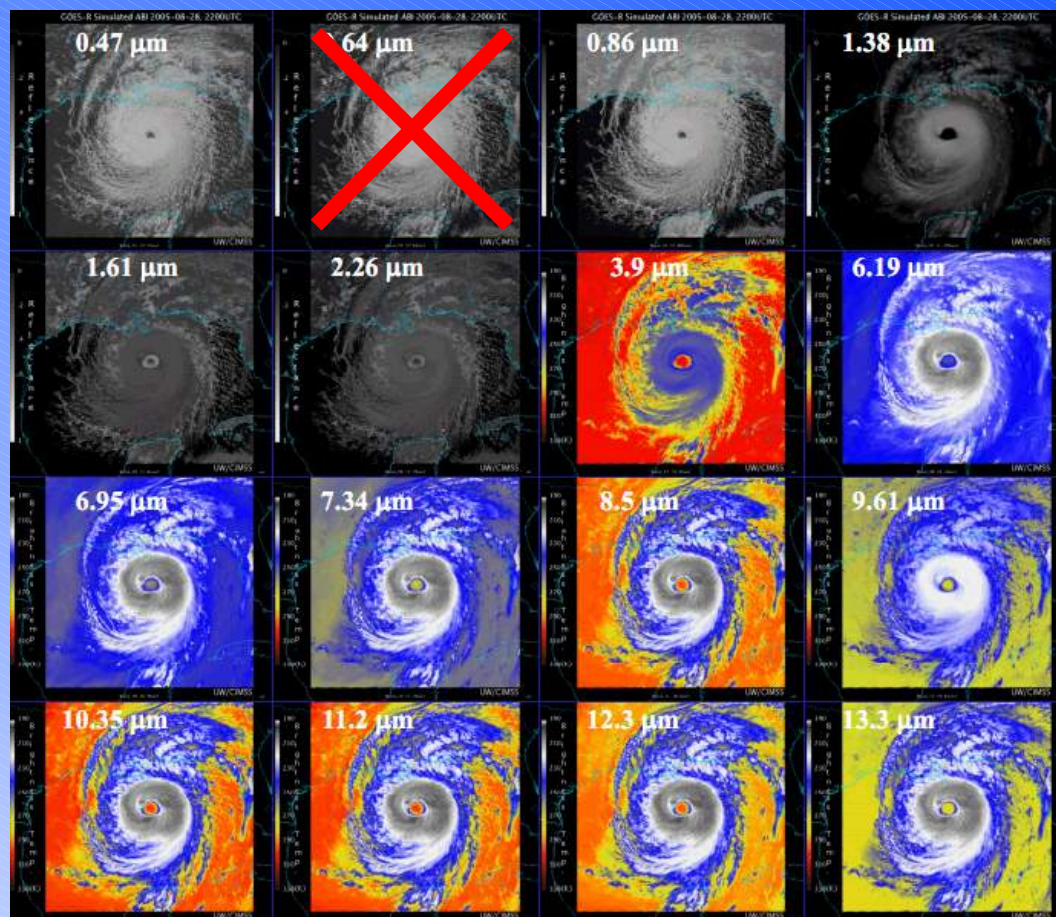
Development of the statistically sound and high performance quantitative image restoration algorithm, ensuring utilization of the data produced by GOES-R sensors.

**The technical approach** is based on adapting and enhancing our previous work on the restoration of MODIS 1.6 micron band

**Impact on products:** The algorithm is quantitative in that the restoration will be a numerical estimate suitable for input to GOES-R products

## Risk: Potential Instrument Damage

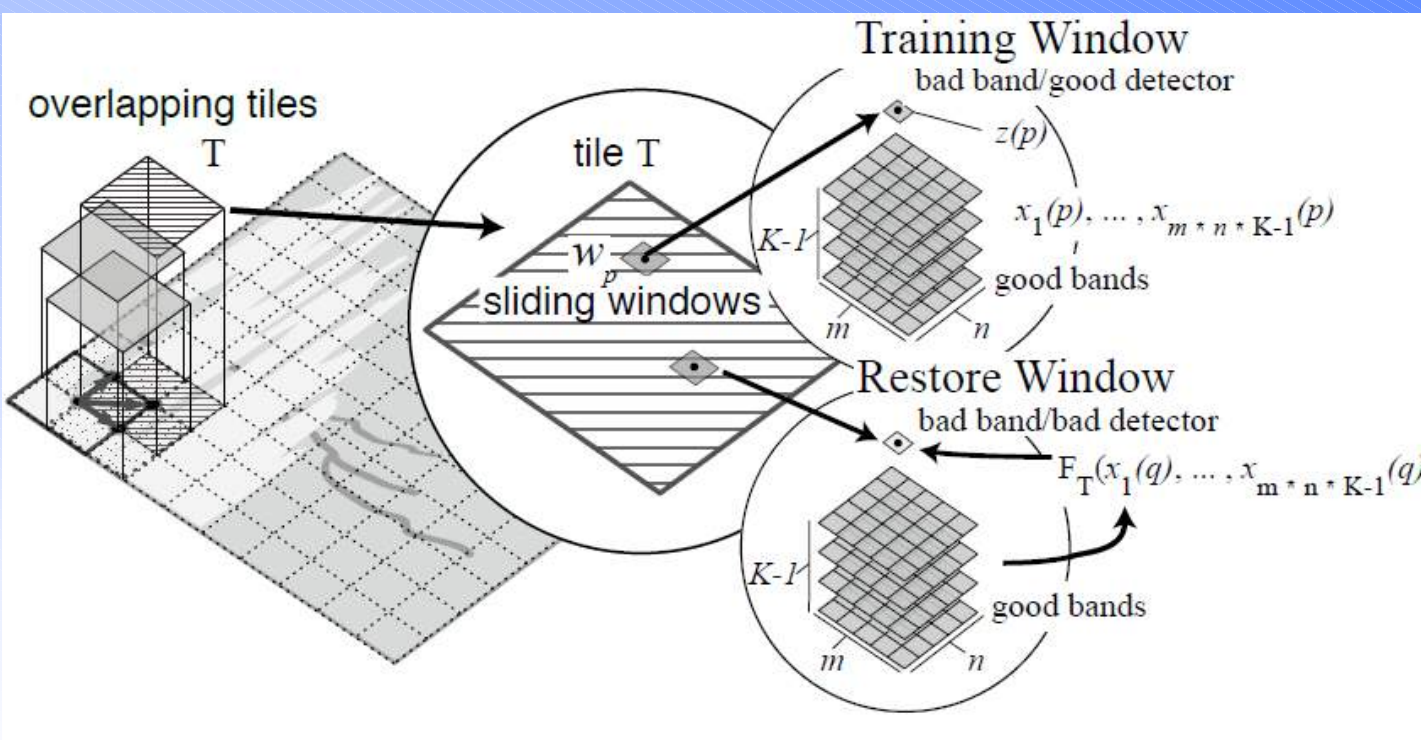
## Solution: Quantitative Restoration



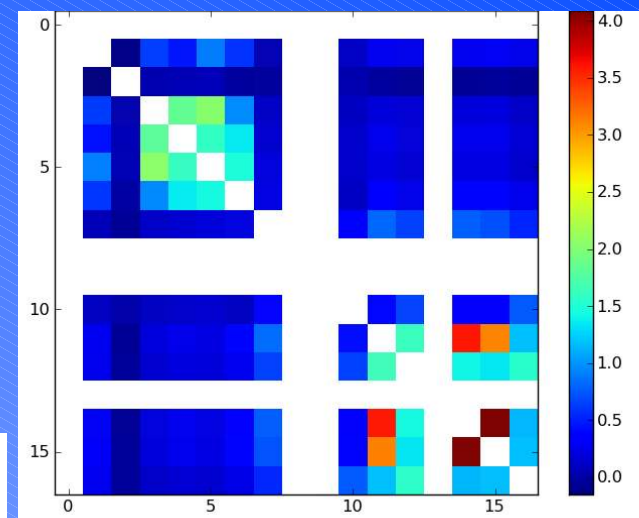
# Restoration Approach

- Other bands correlated / have mutual information
- Spatial correlations within damaged band / can use good detectors for training
- Window based algorithm
- Locally varying regression

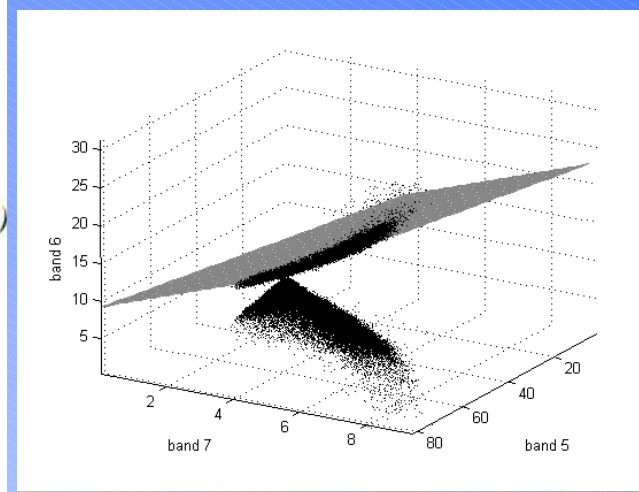
## Special + Spectral Algorithm



## Shared information



## Local prediction



# Milestones and Outcomes

## Year 1 milestones and progress:

**Adapt our current 1.6 micron band MODIS restoration algorithm to work with visible bands of the ABI simulated data (ongoing)**

**Adapt our current algorithm on visible bands to operate on near infra-red and infra-red bands (ongoing)**

**Investigate improvements by integrating spatial interpolation within the damaged channel with cross band interpolation**

**Investigate fusing information from full disk and CONUS high resolution for restoration**

## Outcomes:

An open source software library (source code)

Documentation and regression tests

Publications