

# Sheraton Waikiki Camera



## Background

- HIOOS Digital Camera; [http://www.soest.hawaii.edu/hioos/hioos\\_livephotos.php](http://www.soest.hawaii.edu/hioos/hioos_livephotos.php)
- Quantitative Measure Of Beach Morphology & Surf Zone Processes



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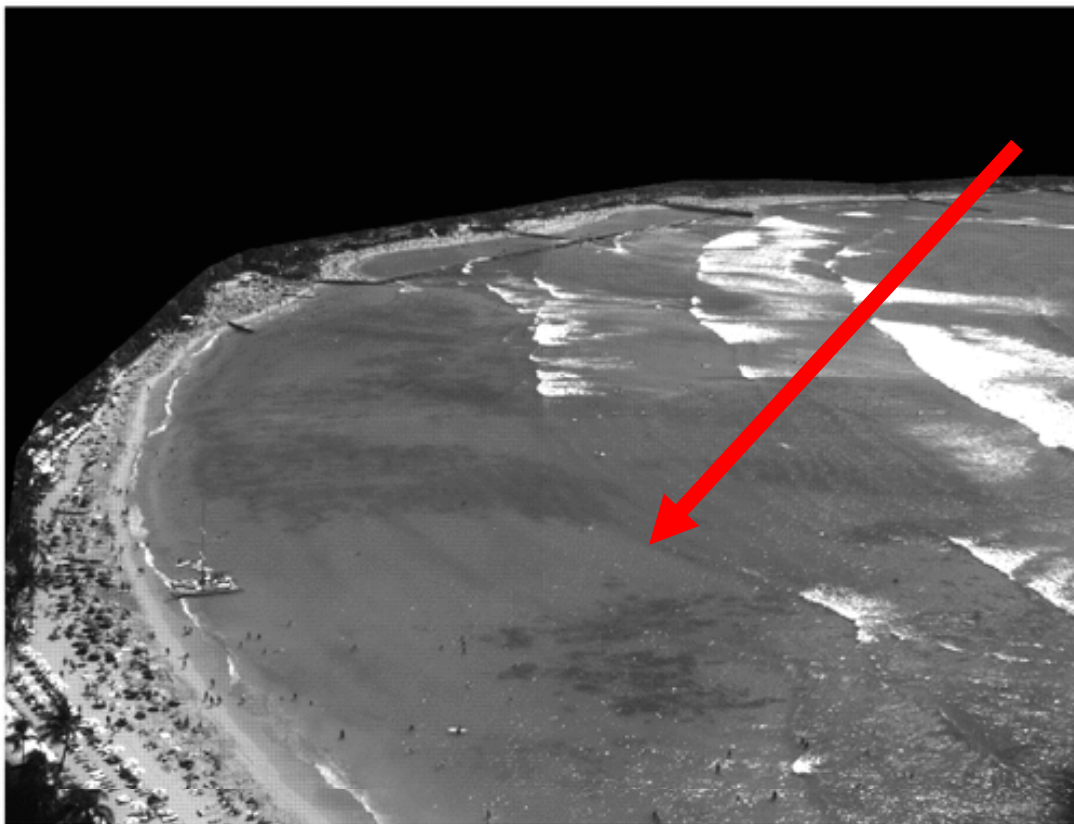
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# Sheraton Waikiki Camera

Date 2/26/2008 Time 12 hr



## Camera Data

- 2008-2010
- Still images
- Sample rate 10 mins
- Daily @ 12pm



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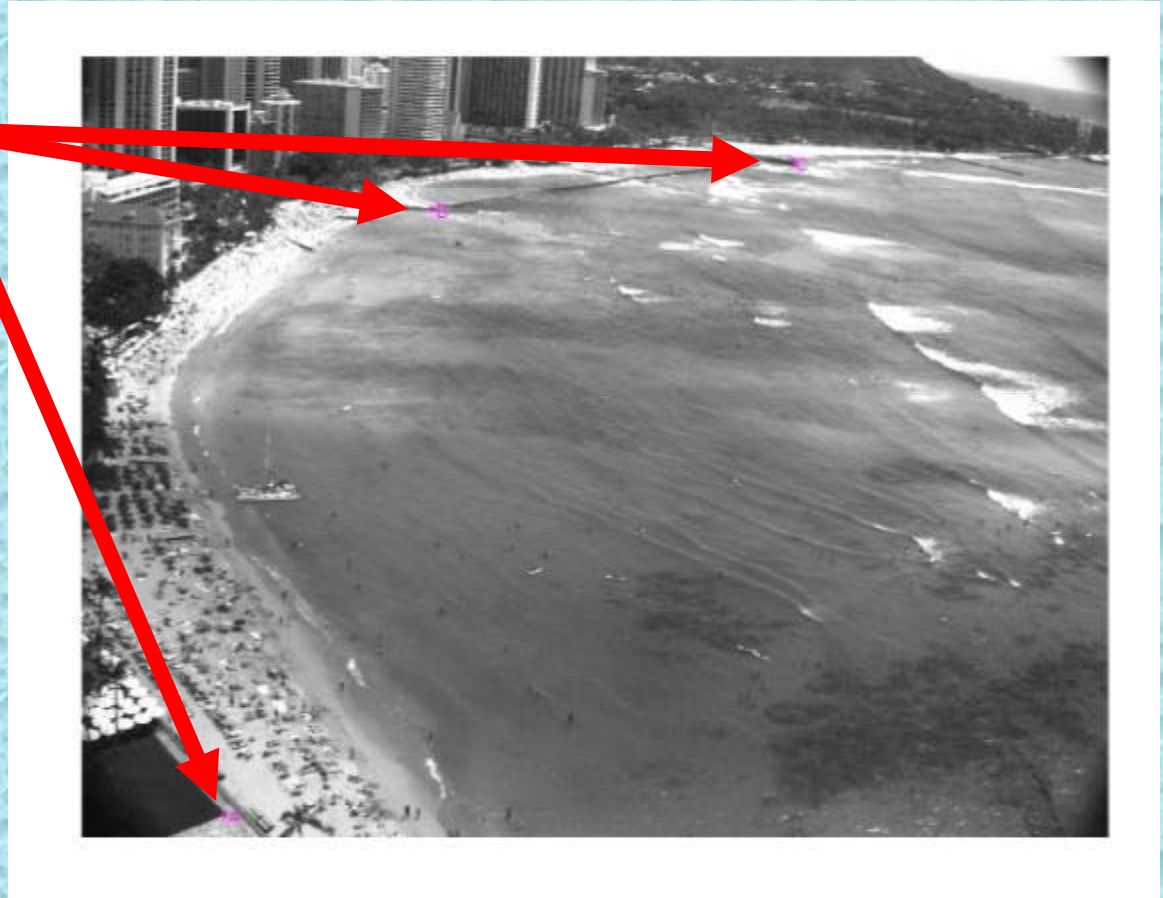
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## Photogrammetry

- Ground Control Points (GCPs)
- LIDAR (x,y,z)
- Image Pixels



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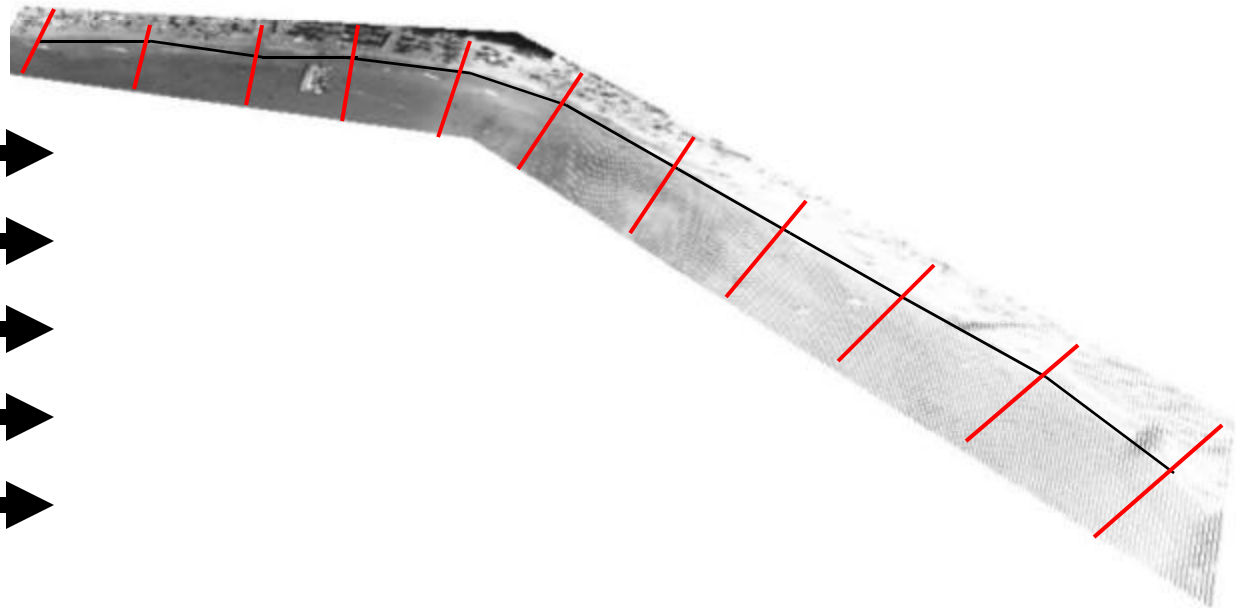
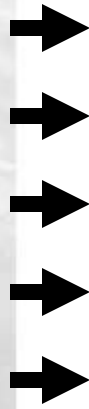
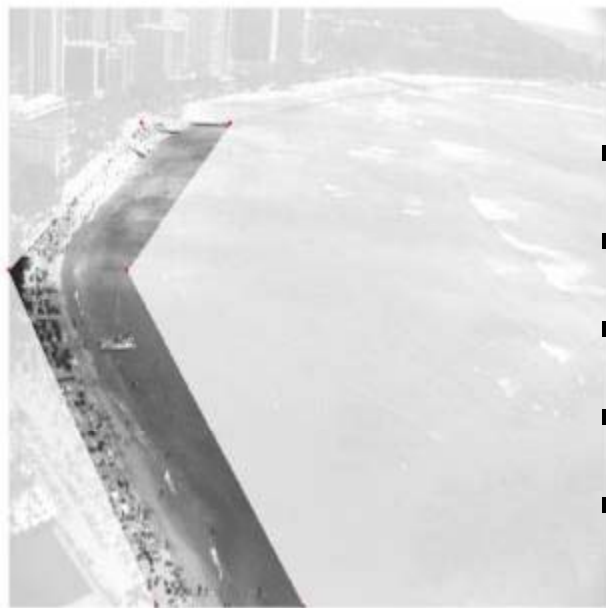


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## Coordinate Transformation

Camera Space

World Space



- 11 Orthogonal Transects ~30m
- Interpolate Pixels



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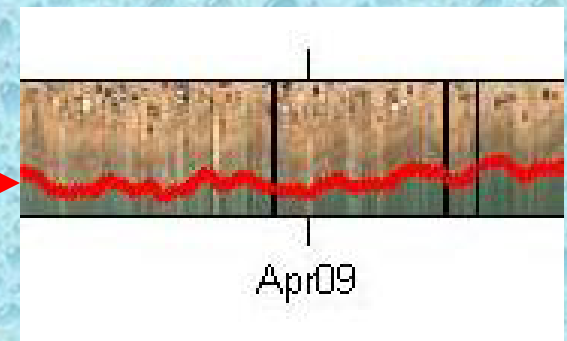
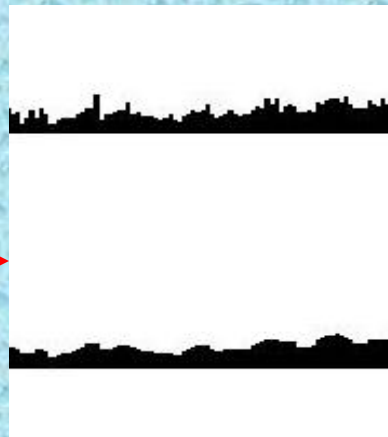
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## Time Stacks



### Edge Detection

- Hourly Average  
(noon to 1pm averaged, 6 images)
- RGB Vectorization  
(thresholds defined to ID changes in pixel intensity)
- Binary BW Image
- Filtering



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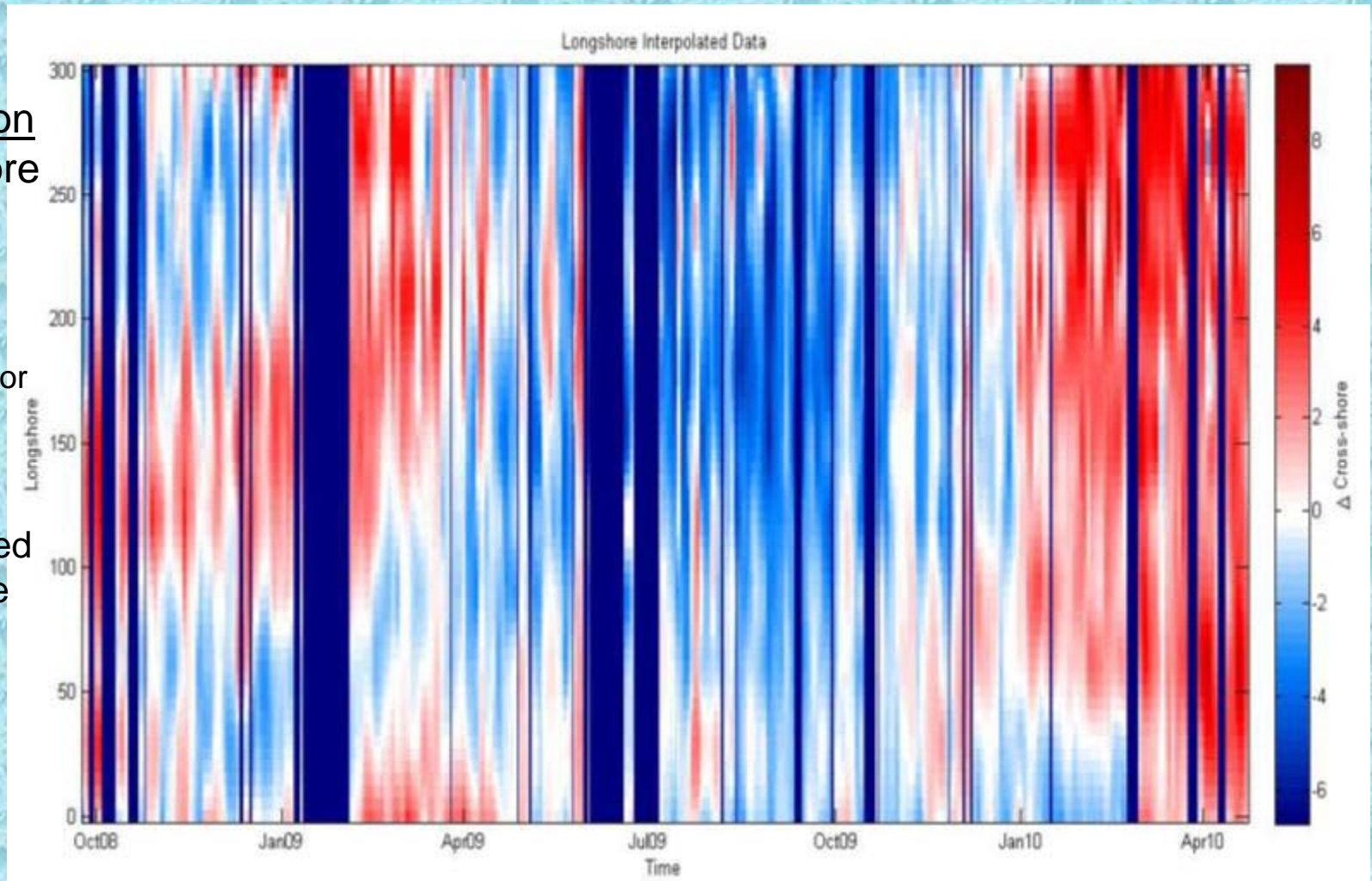


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## Shore Motion

- Cross-shore Variability (reference to mean position calculated at each transect for the entire time series)

Accretion- Red  
Erosion- Blue



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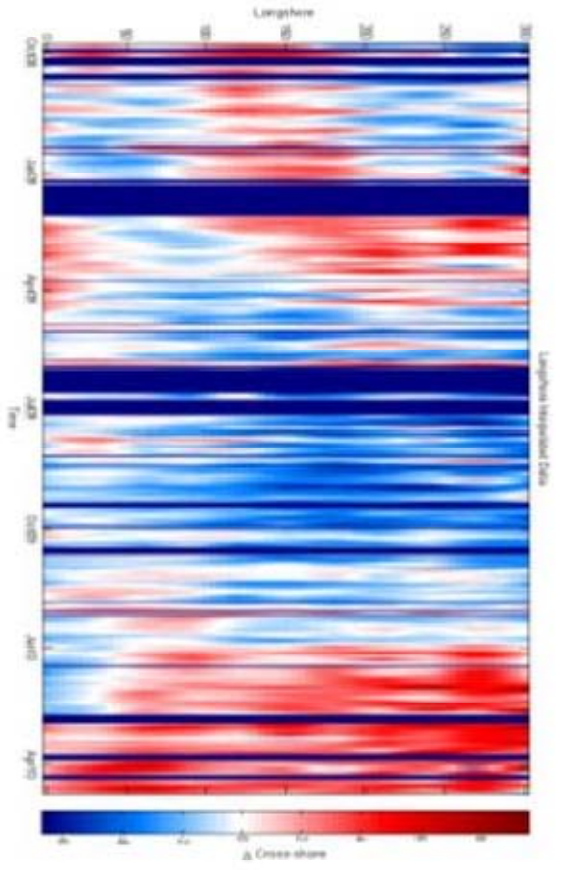
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Accretion- Red  
Erosion- Blue



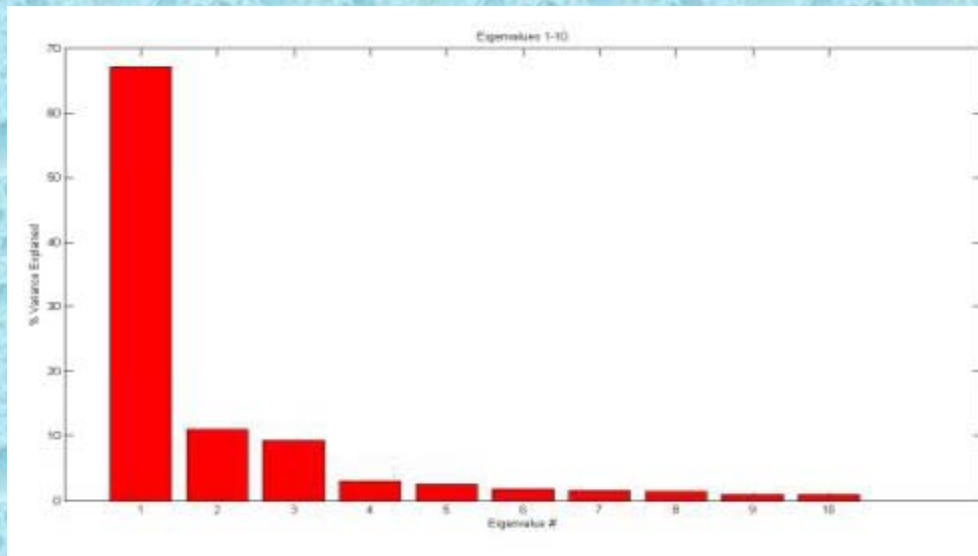
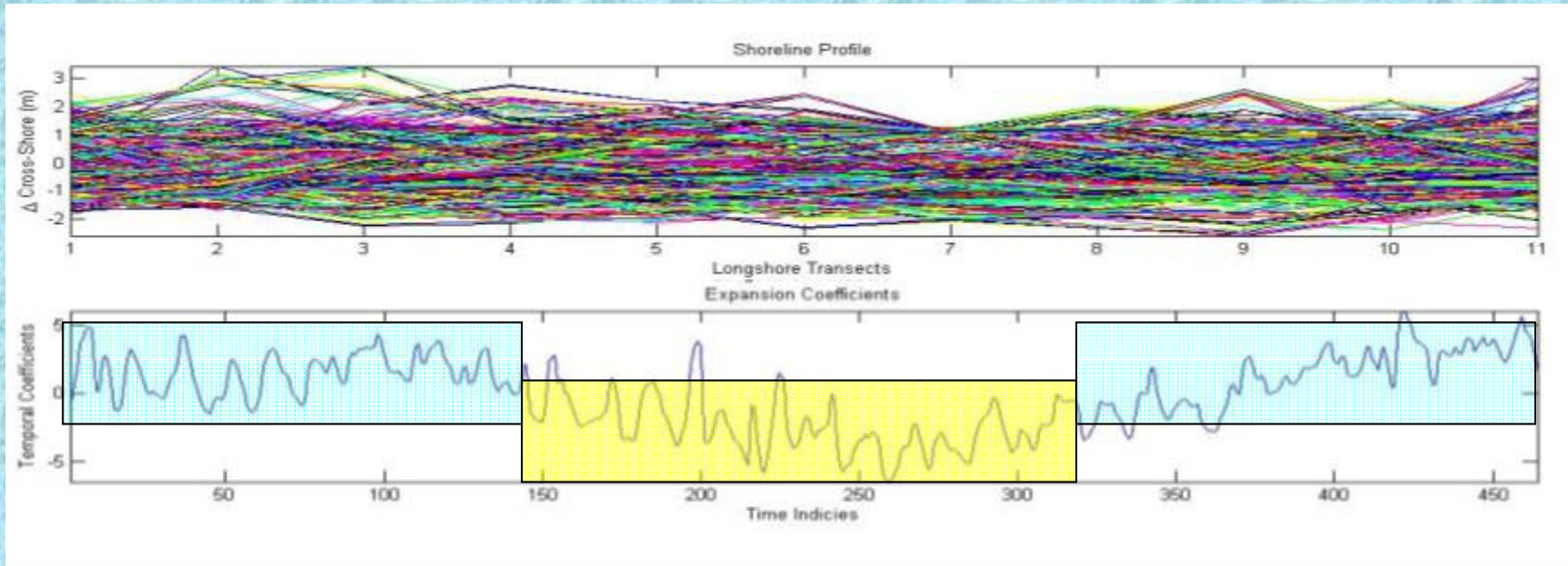
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## Next Steps

- Quantify cross-shore variability
- Identify beach response to wave event (and nearshore processes)
- Develop management recommendations/guidance
- **THANKYOU!**



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