Seasonal Sand Level and Wave Variability on Southern California Beaches

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Southern California Beach Processes Study (SCBPS)

- Airborne LIDAR surveys
- In situ surveys at two focus sites
- Wave estimates
Seasonal Sand
Volume Change
Lagoons and Harbors
Lagoons and Harbors

Cobbles
Lagoons and Harbors

Cobbles

Bedrock
• Sandy beaches only, still considerable alongshore variability

• Sand grain size increases from South to North

Sand grain size data collected by Jen Haas and Neal Driscoll
Wave Data

- Spectral refraction model
- Swell model initialized with offshore buoys
- Sea estimates initialized with local buoys
- Hourly wave estimates every 100 m
Summary

• Primarily seasonal cycle in sand level fluctuations:
  – Accretion in Summer
  – Erosion in Winter

• High alongshore variability of volume change

• Seasonal volume change and wave energy correlated at focus sites but not along entire coast
Work in Progress

- Shoreline change model of individual events
- Offshore bathymetry changes at focus sites
Thank you.

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