Proceedings of Coastal Zone 09
Boston, Massachusetts
July 19 to 23, 2009

OBSERVATIONS OF COASTAL SUSPENDED SEDIMENTS DURING THE 2005 HURRICANE SEASON.

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KEYWORDS: acoustics, suspended sediments, hurricanes.

From June 22 2005 until the end of that year, a site in 18m of water off the coast of Miami was instrumented with optical and acoustical sensors. These instruments were deployed to study the transport of sediments under conditions typical for that location and to observe possible excess sediment loads due to a large dredging operation at the Port of Miami. During the active hurricane season of 2005, four hurricanes passed near the site. (Dennis,Katrina,Rita and Wilma) Distinct signatures from the storms were seen in the data. In all cases, the sediment concentrations were observed to rise significantly during the periods of highest winds and were also observed to remain at elevated levels for several days after the passage of the storms. Acoustical data at 1200 kHz and 600 kHz suggest that a shift in the constituent scattering field occurred with the passage of the storm and that this shift persisted and evolved for several days after the passage of the storm. Results from the optical and acoustical instruments are presented here along with the concurrent observations of winds, ocean currents and waves at this site. The observed effects from each of the four hurricanes are similar but significant differences are also observed. Attempts will be made to understand these differences in the context of the severity and direction of travel of each of the storms.

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