Hydrodynamic and Sediment Transport Modeling of March 1998 Resuspension Event in Lake Michigan

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Introduction
A systematic assessment of recent research efforts in lake hydrodynamics and sediment transport modeling in the Great Lakes, Lake Michigan, and Lake Erie is presented in this special issue of Ocean Modeling. The reader is referred to the Introduction and concluding remarks of this special issue for an overview of the modeling approaches and the objectives of the studies. The reader is also referred to the Introduction and concluding remarks of this special issue for an overview of the modeling approaches and the objectives of the studies.

Methodological Data
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Oceanographic Data
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Results
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Conclusions
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Hydrodynamic model evaluation and sensitivity
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Meteorological data were obtained from 12 National Weather Service stations around Lake Michigan (Fig. 2). In addition to objectively revealed a recurrent turbidity plume observed every spring since 1992, the resuspension plume of March 1998 was one of the largest events of record (Fig. 1). Our current understanding is that the initiation of the plume is caused by a major storm with strong northerly winds generating large waves in southern Lake Michigan. The strong waves, in turn, lead to significant alongshore transport and longshore sediment transport in the eastern shore of the lake, coincidentally near the areas of highest measured long-term sediment accumulation in the lake. The strong waves, in turn, lead to significant alongshore transport and longshore sediment transport in the eastern shore of the lake, coincidentally near the areas of highest measured long-term sediment accumulation in the lake. A systematic assessment of recent research efforts in lake hydrodynamics and sediment transport modeling in the Great Lakes, Lake Michigan, and Lake Erie is presented in this special issue of Ocean Modeling. The reader is referred to the Introduction and concluding remarks of this special issue for an overview of the modeling approaches and the objectives of the studies. The reader is also referred to the Introduction and concluding remarks of this special issue for an overview of the modeling approaches and the objectives of the studies.

The model qualitatively reproduces the observed large-scale circulation in the center of southern Lake Michigan for 1-30 March, 1998. Comparison of modeled and observed currents at the nearshore station on vertical current distributions. Observations during March 9-14 (Fig. 12a) showed strong southerly longshore currents (up to 45 cm/s) along the shoreline and deposition occurred offshore (Fig. 8). Overall, the results from the hydrodynamic model are encouraging in that they capture the major features of the large-scale circulation and resuspension event.

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