A LOOK AT A DAY OF DATA FROM THE TOPEX/POSEIDON GPS RECEIVER

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On August 10, 1992, the Topex/Poseidon Satellite was launched into orbit about the Earth to begin its mission to chart the oceans' topography. One of the instruments on board this satellite is a receiver for tracking the navigational satellites of the NAVSTAR Global Positioning System (GPS). The purpose of the receiver is to provide the data required to enable a demonstration of continuous sub-decimeter level positioning of Topex/Poseidon using the GPS.

This discussion will briefly describe the data and then focus on the special statistical tools used to pre-process and monitor the large quantity of navigational data. It will be shown how robust regression splines provide useful models and residual diagnostics for the task. Numerous specialized graphics will be presented to show how the data are monitored in a daily operational environment.

ABSTRACT FOR
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