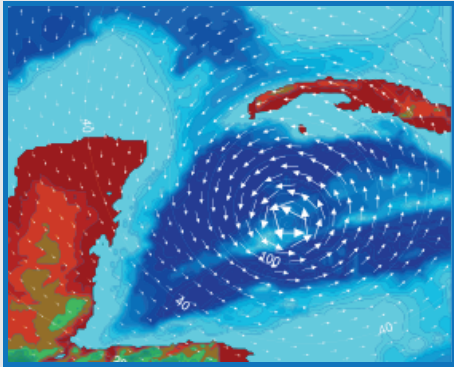


Storm Surge Model

The storm surge model requires, for a given instant, the pressure and the wind speed at the eye of the hurricane in order to compute the wind speed at any site along the coast. With this wind speed and the bathymetry (or the shape of the seabed), the atmospheric pressure at the site and the beach topography, the depth and extent of the flood due to storm surge is obtained.



1 The radius of the eye of the hurricane is calculated from the barometric pressure.

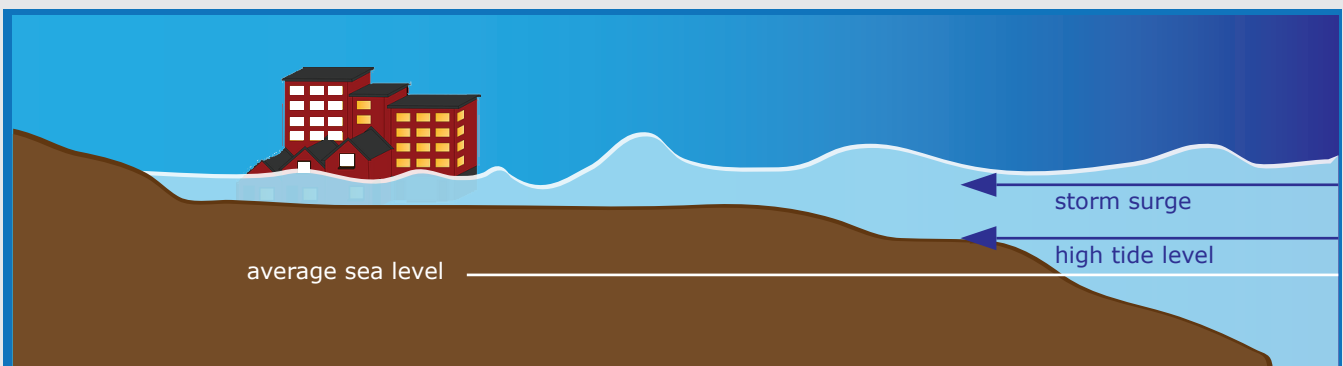
Wind field computed for a given instant of the hurricane path. The bathymetry is shown in blue

2 The wind speed and the direction of the wind at the site of interest along the coast is obtained as a function of the path of the hurricane and the distance to the eye wall; with this wind speed, the bathymetry and the atmospheric pressure at the site, the height of the storm surge is obtained.



Storm surge obtained for a hurricane similar to Gilbert (1988)

3 The flood footprint is obtained up to an altitude where the topography is higher than the flood height.



This Model is included in:



The ERN financial risk management software

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