



Modeling of storm surges induced by the hurricane “Lili” in 2002 in Guadeloupe

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Tropical hurricanes and cyclones are very important component of natural disasters in Guadeloupe. The return period is 2.2 years based on historical information of cyclones for period 1635-2003, and this confirms high risk of the tropical cyclones for Guadeloupe. The correlation between cyclones characteristics and the storm surge in Guadeloupe is discussed. The numerical simulation of the storm surges induced by the hurricane “Lili” (21 September – 04 October 2002) is done in the framework of the nonlinear shallow-water theory. Results of the calculations of the sea level variations near several coastal locations at Guadeloupe are presented. Wave heights in some coastal locations at Guadeloupe (Pointe-a-Pitre and Deshaies) exceed 10 cm. Obtained results may be applied for the risk assessment for Guadeloupe.