

---

## EROSIONAL PROCESSES IN ROCKY AND SEDIMENTARY COASTS

---

This section of the current issue of *Geologica Acta* includes three selected communications from the workshop held by the Latin American Network in Remote Sensing and Coastal Hazards, celebrated during the IV Symposium of Beach and Coastal Ecosystem Integrated Management (Varadero, Cuba; November 2008). Coastal erosion was the main hazard analyzed in this workshop due to its relation with the topic of the Symposium. Thus, a wide range of modern techniques applied to the characterization of erosive processes in both rocky and sedimentary coasts were showed including case studies from Argentina, Brazil, Colombia, Cuba, Portugal and Spain.

The first paper entitled **Combined beach-inner shelf erosion in short and medium term (Maspalomas, Canary Islands)** by Á. Fontán, J. Alcántara-Carrió and I. Correa presents an analysis of the sedimentary budgets in the beach and the inner shelf of a coastal area with intensive erosive processes. Accurate topo-bathymetric measurements allow describing the sedimentary exchanges between the littoral and the inner shelf at short (seasonal) and medium (several years) terms. The sedimentary map produced from Side Scan Sonar images allows identifying the main sinking area from the submerged platform to deeper zones. The factors influencing the erosional trend of Maspalomas include the wind and wave regimes, human activities (local ones as well as the impact of global climate change) and the geological framework. This last factor, although important, is frequently not considered in the assessment of causes and solutions to coastal beach erosion.

The article **Overwash hazard assessment** by B. Rodrigues, A. Matías and O. Ferreira presents the analysis of overwash associated to the run up of storm waves. This study calculates the height of the extreme run up with different return periods and compares it with dune topography in selected sectors of the Ançã Peninsula (South of Portugal). The maps for collision and overwash show that the main part of the dune base along the peninsula is vulnerable to collision regime. Consequently, the method predicts fairly well the vulnerability of littoral dunes to overwash.

Finally, the article **Mapping of landslide susceptibility of coastal cliffs: the Mont-Roig del Camp case study** by I. Montoya-Montes, I. Rodríguez Santalla, M.J. Sánchez García, J. Alcántara-Carrió, S. Martín-

Velázquez, D. Gómez-Ortiz and T. Martín Crespo shows the application of fieldwork and laboratory studies in the production of a landslide susceptibility map in a coastal zone where there is a clear hazard to the population. The applied techniques include topographic measurements and geotechnical analyses combined with numerical model simulations and the preparation of a Geographic Information System. The triggering factors controlling landslide are mainly wave exposure, shoreline variations, cliff height, cliff slope, geotechnical quality of the rocky mass, superficial runoff and cliff orientations. The heuristic approach allows identifying the most important factors controlling landslide susceptibility. Therefore, this method can be used in the assessment of landslide hazards in coastal cliffs where statistical or deterministic methods cannot be applied.

The Latin American Network in Remote Sensing and Coastal Hazards (<http://www.madhatt3r.com/websites/redriesgoslitorales/index.php>) that promoted this section was funded by the Latin American Program of Science and Technology for the Development (CYTED; [www.cytel.org](http://www.cytel.org)) from 2007 to 2010. This network was composed of thirty-three research and technical groups from Argentina, Brazil, Chile, Colombia, Cuba, Mexico, Portugal and Spain. Included in this collaboration network were several research stays, eight workshops, the participation of different groups in international research projects and several international publications (including these three papers and a free online handbook).

We would like to thank the CYTED for the support of the network. Our more sincere acknowledgment to all the colleagues who participated in the different activities of the network, especially to those who prepared the papers presented in this issue. Finally, but not less importantly, we would like to thank all the reviewers and editors of *Geologica Acta* for their help with the manuscripts.

Guest editors:

Javier Alcántara-Carrió

*Institute of Environmental and Marine Science.*

*Universidad Católica de Valencia*

Antonio Rodríguez Perea

*Departament de Ciències de la Terra.*

*Universitat de les Illes Balears*

