

# THE CONTRIBUTION OF IMPROVED ALTIMETRY TO A STUDY OF NW MEDITERRANEAN SEA COASTAL DYNAMICS

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## 1. INTRODUCTION

Monitoring the dynamics of marginal oceanic systems remains a complex and challenging task, owing to the wide spectrum of spatial and temporal scales of the oceanic processes occurring there. On one hand, sustained in situ observations are generally too sparse in coastal areas despite the development of initiatives by international programs. On the other hand, remote sensing techniques for routinely monitoring of the sea surface (e.g. radar altimetry, SST, ocean color) encounter intrinsic limitations when moving near coasts due to the fact that they are designed with open ocean in mind and in most cases do not account for specificities of the coastal zone (presence of land, of clouds, inappropriate processing, etc.). In the coastal zone, an integrated approach merging in situ, remote sensing and model data should be preferred, in particular by adopting improved (reprocessed) coastal altimeter data: this is one of the central objectives of the MARINA (MARGin INtegrated Approach) project funded by CNES within the Ocean Surface Topography Science Team (OST-ST) framework.

A data integration case study has been experimented in a pilot coastal system, around Corsica Island in the NW Mediterranean Sea, which represents an interesting marginal coastal system. There, in situ ocean, local geoid and meteorological parameters have been collected and processed to be compared and merged with high resolution, optimized coastal altimetry products from the X-TRACK and COASTALT (funded by ESA) processors. The results of this comparison will be illustrated in detail, highlighting the potential and limitations of such an integrated approach.