



EVREST Project Report:

Tide observation campaign along the Algarve coast: Lagos and Barreta Island

Project Funding: Fundação para a Ciência e a Tecnologia (FCT)

Scientific Domain: Marine Sciences and Earth Sciences - Estuarine Coastal and Littoral Systems

Project reference: PTDC/MAREST/1031/2014

Report Title	Tide observation campaign along the Algarve coast.
Reporting Period	18-09-2017 to 20-10-2017
Delivery Date	15-11-2017
Related Task	Task 2.2. Analysis of relative sea-level variations
Objective	Validate the difference of mean sea level for: Lagos and Barreta Island.
Participants	Carlos Antunes & Fábio Madeira
Other Information	Location: Tide Gauge (Lagos) and Barreta Island.

TABLE OF CONTENTS

General Information	1
Administrative Tasks	1
Deployment of pressure transducers	1
Lagos (Tide Gauge).....	1
Barreta Island	2
Sensor's Data Information	3

TABLE OF FIGURES

Figure 1: National Tide Gauge (Lagos), with path followed to deploy the transducer (Level TROLL 400).	1
Figure 2: Tide gauge (Lagos). Left: Placement of the transducer (Level TROLL 400) in the well of Lagos national tide gauge. Right: Submerged transducer (Level TROLL 400) placed inside the well.	2
Figure 3: Barreta Island, with path followed to deploy the transducer (Level TROLL 400).	2
Figure 4: Barreta Island. Left: Eastern view of Barreta Island. Right: Place where the transducer (Level TROLL 400) was placed.	3

TABLE OF TABLES

Table 1: File's information about the devices configuration.	3
Table 2: GPS coordinates of transducers locations.	3

GENERAL INFORMATION

Administrative Tasks

In the recent campaign, one authorization was requested for the placement of 1 transducer. So, one request was made to the Direção-Geral do Território (under the care of Eng. Helena Ribeiro) for temporary installation at tide gauge (Lagos).

The main purpose of this campaign was to validate the MSL (Mean Sea Level) difference between Faro and Lagos and compare it with data obtained from the March campaign. Thus, through the comparative analysis with the tide models and their respective mean levels, it is expected to understand the variation of the MSL in Algarve.

Deployment of pressure transducers

Lagos (Tide Gauge)

Lagos National Tide Gauge is located next to Av. das Descobertas, at the exit to Sagres, and at the mouth of Bensafrim stream (**Figure 1**). The transducer was placed inside the Lagos Tide Gauge at the end of Cais da Solaria, where the Bensafrim stream enters the sea (**Figure 2**).

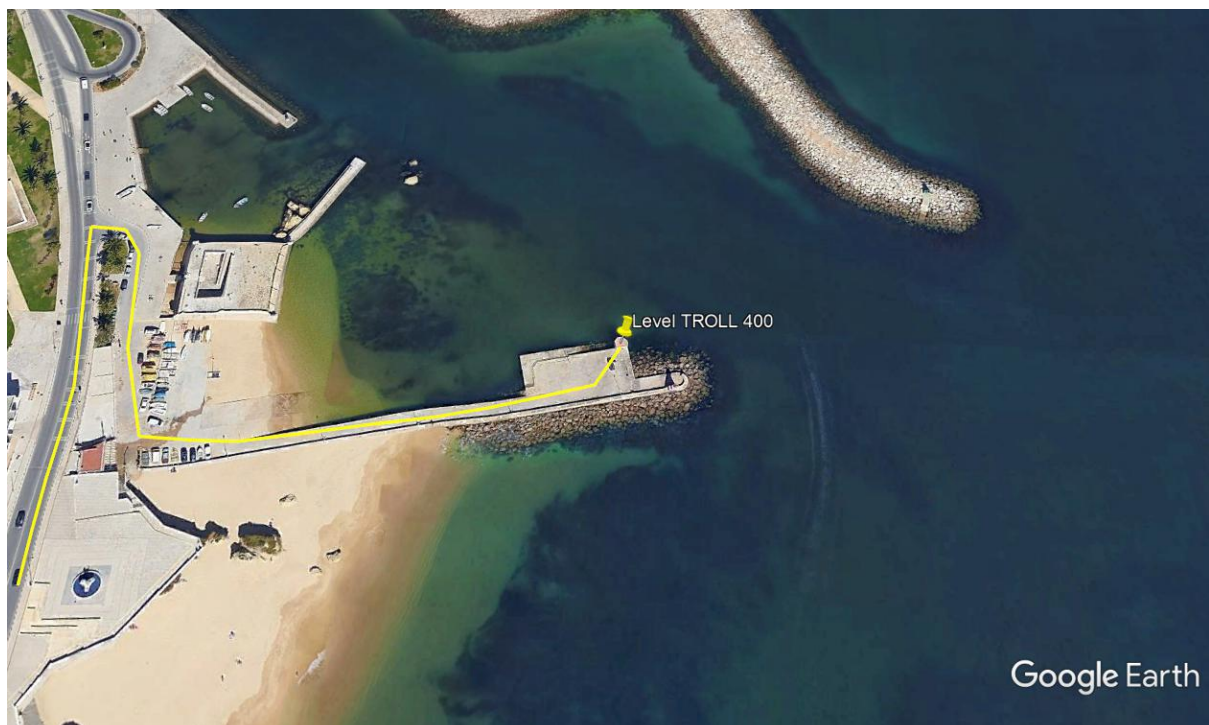


Figure 1: National Tide Gauge (Lagos), with path followed to deploy the transducer (Level TROLL 400).



Figure 2: Tide gauge (Lagos). Left: Placement of the transducer (Level TROLL 400) in the well of Lagos national tide gauge. Right: Submerged transducer (Level TROLL 400) placed inside the well.

Barreta Island

Barreta Island belongs to the Ria Formosa barrier-island system (**Figure**), Algarve, South Portugal. The transducer is in the eastern part of Barreta Island, more precisely, at the landing dock of the commercial ferry boat (**Figure 4**).



Figure 3: Barreta Island, with path followed to deploy the transducer (Level TROLL 400).



Figure 4: Barreta Island. Left: Eastern view of Barreta Island. Right: Place where the transducer (Level TROLL 400) was placed.

Sensor's Data Information

Table 1: File's information about the devices configuration.

	Lagos	Barreta Island
Device	Level TROLL 400	Level TROLL 400
Original Filename	Lagos-Set2017_2017-10-23_09-19-32-834	Faro-Set2017_2017-10-23_09-48-47-499
Datetime (placing)	19/09/2017 07:30:00* ¹	18/09/2017 19:55:00* ¹
Datetime (withdraw) (GMT Summer time)	20/10/2017 09:00:00* ¹	20/10/2017 14:30:00* ¹
Schedule Start Time (GMT Summer time)	19/09/2017 07:00:00* ¹	18/09/2017 18:00:00* ¹
Schedule Stop Time (GMT Summer time)	21/10/2017 09:00:00* ¹	20/10/2017 06:00:00* ¹
Data Acquisition Rate	5 minutes	5 minutes

*¹These datetimes belongs to GMT summer time, due to the time change on the 26-Mar at night.

The files obtained from the sensors are in a folder called "Campanha-Set2017". The files regarding Lagos and Barreta Island have a size of 1,644 and 1,649 KB respectively. The original extensions of Lagos and Barreta Island files were *.wsl.

Table 2: GPS coordinates of transducers locations.

	Latitude	Longitude	Altitude
Lagos	N 37° 5' 55.903"	W 8° 40' 0.568"	0.186 m
Barreta Island	N 36° 57' 57.4479"	W 7° 52' 15.4311"	0.378 m