## Defining routing of the subsea gas pipeline of the Tamar gas field.

The Company Nobel energy is planning to build a 16-inch gas pipeline that will transport 20 million standard cubic meters of gas per day from the Tamar gas field (coordinates: 33.078333, 33.951389) to the Mary B platform (31.805000, 34.317222), for further export to customers in Europe.



The pipeline will follow the subsea floor.

You are in the pipeline design team. Your main task is to propose the best pipeline path considering the following:

- Pipeline length should be minimum to reduce costs and environmental impact and pressure drop.
- The pipeline should be, for the most part, submarine.
- The pipeline should not traverse cities.
- The pipeline should not traverse tall mountains or require building tunnels.
- The pipeline should not traverse protected areas such as national parks.

Additionally, you are required to provide the following:

- Estimates on pipeline length, cost and pressure drop
- Make a 2D color plot showing the depth of the seafloor as a function of latitude and longitude for the area where the pipeline will be placed
- Plot the pipeline trajectory on a map, showing the coastline, and the start and end point.

## Useful data:

- The cost of the pipeline is 3.8 million USD per km.
- The pressure drop (DP in bar) is a function of the pipeline length, DP = 0.15 \* L. (with L in km)