

Open problem # 1

Water is a very low compressible fluid. It follows that applying a hypothesis of incompressibility has little impacts on the analysis of common problems in fluid mechanics. The water depth of the oceans is however considerable, to the point that the density of the water at the bottom of the oceans is greater than that at area. 1) Describe the evolution of the density of the surface to the bottom of the oceans. 2) Estimate what would be the elevation of the oceans if the surface density prevailed over the entire water column.

Guidelines

This is an open problem - you are looking for information about an existing system, not tampering with it. It comes back to you therefore document yourself, make appropriate assumptions, establish an analysis and

apply it properly. An evaluation grid is available to guide you in each of the stages of implementation and in the

writing your report. The four steps are: identifying the problem, developing a procedure resolution, application of this procedure, and evaluation of the solution and procedure. Echoing these

four stages, your report will be structured in four parts: introduction, methodology, results and discussions and conclusion.

Your report is limited to 2 pages (Times 12 point font and 1.5 line spacing). The cover page is optional

and is not counted. Figures and tables are placed after the text, without any restriction as to their

number. It is important that each figure and each table is clearly numbered and identified. They must all be mentioned and described in the text.