Network Analysis and Simulation - Homework 4

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Exercise 2 - Read logs and analyze data

In this second exercise the goal was to extract a look-up table from a log file of a simulator and use it to compute some measurements on useful quantities in underwater optical communications. In particular, the log files are obtained from the simulations of the ambient light irradiance E_0 with the simulator HYDROLIGHT. From the 3 different dump files (each for a different value of $c \in [0.15, 0.4, 2.19]$ with c the attenuation coefficient) I recovered the values of E_0 and the corresponding depth z in meters using a `perl` script. It uses a regular expression to identify the right rows of the log and selects the columns with the desired values. In Figure 1 E_0 is plotted as a function of the depth z.

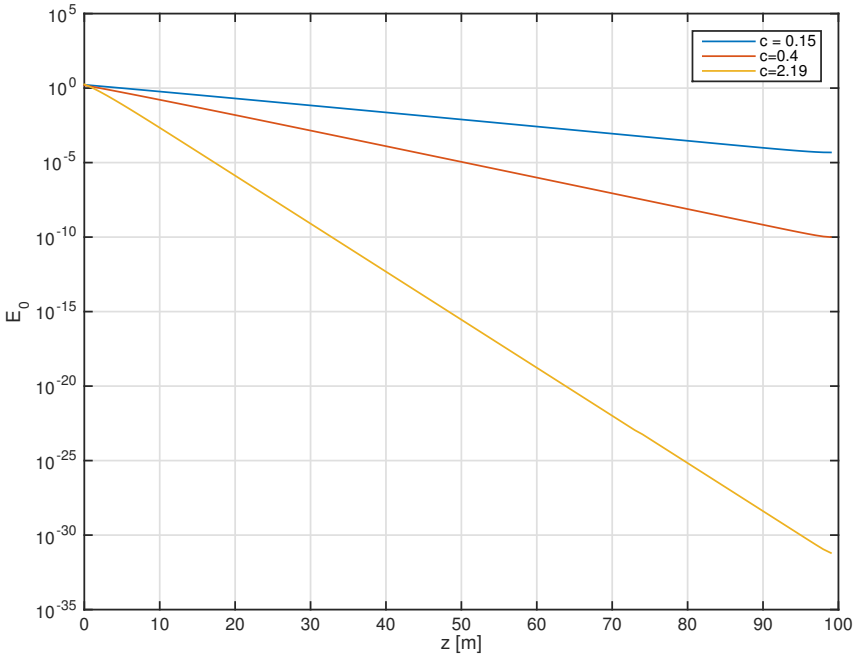

Figure 1: Irradiance E_0 vs. z

Some evaluation on the propagation are then carried out with a MATLAB script that uses the provided parameters for receiver and transmitter.

References

[1] Y. Le Boudec, Performance Evaluation of Computer and Communications Systems, EPFL, 2015