ABSTRACT

Underwater communication has different characteristics from commonly air medium. Electromagnetic wave cannot be used in underwater communication because of very large attenuation from the water. As a solution, acoustic wave was used because it has characteristic that can propagate long distances in water medium. Water medium that acoustic signals propagate also has characteristics very different from air medium. In water medium, the difference in depth, salinity, temperature, and others are some of the important parameters that can affect the acoustic signals when propagate in it. The purpose of this research is to modelling the channel of shallow water, so it can be analyzed the factors that affect the signal when it propagate in water medium and in the future of this modeling can be used as a reference in performing the measurement and comparison of measurement results. In this model used MatLab software. By analyzing the simulation results, it is known that the effect of the distance and the depth is proportional with the reduction of signal amplitude. In addition, the smallest arrival time obtained in the first observations at \( R = 100 \) m and \( h = 10 \) m with a value of 0.0729 s and the largest arrival time contained in the \( R = 200 \) and \( h = 14.5 \) m with a value of 0.1384 s.

Key Word: underwater acoustic, channel, shallow water
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