WHOI Simple Cartesian Three-dimensional Parabolic Equation sound propagation model: CARPE3D.

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This Matlab (The Mathworks, Inc.) programming language underwater sound propagation model is provided as a service to the oceanographic community. It contains the simplest building blocks for more sophisticated 3D underwater sound simulations. It's called Cartesian Parabolic Equation Code in 3D, CARPE3D.

The code is based on Fortran codes used as UC Santa Cruz for 3D simulation of wave propagation through turbulent media [1,2]. Some of the code was converted to Matlab at Santa Cruz. In about 2005, Dr. John Colosi passed the code to me. There were some inconsistencies in what was provided related to indexing and arrays, and so on, that were identified and repaired.

A WHOI report on this code covers some of the fundamentals of how it operates [3]. Scientific results based on simulations made with this code were presented in one journal article [4] and two Oceans Conference papers [5,6].

References

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