

Evaluation of Exponential Factor on Boundary Value Problem of Inverse Distance Weighting Method of Interpolation

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SUMMARY

Bathymetric information about waterbody is of great importance to many professionals for the installation of moles, ducts, marinas, bridges, tunnels, mineral prospecting, waterways, dredging, silting control of the river, building or reassessing port dimensions, and lakes among others. Depths information about the presence of such a submerge area on a map is obtained via a bathymetric survey. But acquiring this information is economically cost implicative. Managers are deriving ways of getting adequate information about seafloor from using the conventional lead line to an advanced method of imploying single beam echosounder. Information is lost because of the single footprint of this instrument. Another challenge is that it is time consuming depending on the area of study. Since this instrument is limited in coverage, researchers have devised means of obtaining sparse information and then use interpolation to densify the data. Inverse distance weighting (IDW) has been employed to interpolate sounding data with discrepancies at the boundaries. Consequently, this study tends to investigate the behavioural pattern of IDW based on exponential value and how it affects boundaries.

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