

工程与应用

考虑泥沙水下休止角的淤积量测报模型及优化

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收稿日期 2009-8-10 修回日期 2009-10-16 网络版发布日期 2010-3-2 接受日期

摘要 提高水库泥沙淤积量的测报精度对水库的运行与管理有着重要意义。通过分析论证由水下地形点构建的 TIN 三角网的边、三角形面及泥沙水下休止角之间的几何关系, 提出了优化测报模型的休止角条件; 进而利用 Matlab 编制优化的测报程序; 最后结合灞河橡胶坝库区的淤积数据进行了验证。结果表明: 基于泥沙水下休止角的淤积量测报模型可以剔除带有粗差的地形点数据, 提高了淤积量的测报精度。

关键词 [水下休止角](#) [不规则三角网](#) [淤积量](#) [测报模型](#)

分类号 [TP39](#)

Optimization model of measuring and forecasting sediment amounts considering the angle of repose

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Abstract

It is important for operation and management of reservoir to prompt the accuracy of measuring and forecasting reservoir storage or sedimentation amounts deposited in. By analyzing the geometric relationships among the angle of the sides in TIN (Triangular Irregular Network) constructed with topographic point under water, the angle of triangular face and the angle of repose of sediment, a condition about angle of repose for improving the model of measurement and forecast is proposed. Furthermore, by means of Matlab, program of measuring and forecasting sediments deposition is designed. Finally, the method is verified by using the data of sedimentation in Ba River rubber dam. The result shows that the method for measuring and forecasting sedimentation amounts based on the angle of repose not only may reject the data with gross error, but also can improve the accuracy of measuring and forecasting sediment amounts.

Key words [angle of repose](#) [Triangular Irregular Network \(TIN\)](#) [sedimentation amount](#) [model of measuring and forecasting](#)

DOI: 10.3778/j.issn.1002-8331.2010.07.062

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