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黄河下游复式河道滩槽分流特征研究

Research on separated discharge characteristics of floodplain and main channel of the Lower Yellow River compound channel

中文关键词:黄河下游 复式河道 滩槽分流 滩槽治理

英文关键词:Lower Yellow River compound channel separated discharge harnessing of floodplain and main channel

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中文摘要:

采用实测资料分析和理论探讨相结合的方法，研究了黄河下游复式河道滩槽分流特征及其主要影响因素。研究结果表明：1986年后，河道萎缩，相同洪水流量下，主槽分流比有所减小，滩地分流比有所增大；1999年后，小浪底水库蓄水拦沙运用，下游河道持续冲刷，主槽过流能力有所恢复，主槽分流比必然有所增大。运用回归分析方法，建立了黄河下游复式河道滩槽分流比与滩槽过水宽度比、过水深度比、过水面积比、流速比、糙率比和主槽宽深比的单因素响应关系和多因素综合关系，在此基础上提出，定量方面，可运用多因素综合关系式依据未来滩槽6项单因素大小对黄河下游复式河道滩槽分流比进行预测；定性方面，在黄河下游滩槽治理过程中，应注意维持主槽一定的平滩流量和较为窄深的断面形态；注意给滩地留出一定的行洪宽度，在必要的行洪宽度内，尽量减少人类活动对滩地的影响，保持滩地畅通的过水通道，保证滩地相应的过洪能力，减轻河道行洪压力，从而达到确保全断面行洪安全的目的。

英文摘要:

Using the methods of field data analyses and theoretical study, the separated discharge and its influencing factors is researched in the Lower Yellow River. The results show that since 1986, the channel atrophied and the separated discharge ratio of main channel have decreased, and the separated discharge ratio of floodplain increased. After 1999, due to the sluice exercise of Xiaolangdi reservoir, the Lower Yellow River scours, the passing discharge capability of main channel resume in a certain extent and the separated discharge ratio of main channel are increased, and meanwhile, the separated discharge ratio of floodplain decreased. Via establishing the relationship of the separated discharge ratio and the width, depth, area, velocity, roughness and configuration of floodplain and main channel, advices are brought forward. During the harnessing of the Lower Yellow River, a certain extent passing discharge capability and narrow deep configuration of main channel should be maintained; a certain extent passing discharge width of floodplain should be set aside, the influencing of human should be reduced in floodplain, keeping the straightway of passing discharge of floodplain, guaranteeing the passing discharge capability of floodplain, lightening the press of main channel and insuring the safety of control flood.

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