令和 3 年度卒業論文

安定河道の発生条件と河道横断面形に着目した低水護岸の被災リスク評価に関する研究

Study on risk estimation of low water revetment focused on stable channel cross-sectional concept and river channel cross section

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要旨

洪水氾濫リスクを軽減するためには，洪水氾濫にいたる堤防・護岸の被災リスクを適切に評価して，被災リスクの高い区間の河川断面形状の見直しや堤防・護岸の強化などの対応が有効である．本研究では，安定河道理論に基づいて，護岸の被災リスクを簡便かつ確実に評価できる手法の開発を試みる．先行研究では被災箇所の周辺を対象に安定化河道理論に基づく被災リスク評価手法の基礎的な検討を行った．本研究では，被災の無い箇所も含めた検討データを増やし，また被災時の流況を使わずに算定可能な指標を用い，被災箇所の事前情報がない前提での被災リスク評価に繋げることを狙った．安定河道理論に基づく評価指標と，河道横断形に基づく評価指標などを算出し，指標の大小と被災の有無の関係を考察した．一部の被災事例についてある程度の評価はできたが，一般性のあるリスク評価やその指標を策定するには至らなかった．

ABSTRACT

In order to reduce the risk of flood inundation, it is effective to properly evaluate the damage risk of embankments and revetments that lead to flood inundation, and to take measures such as reviewing the cross-sectional shape of sections with high damage risk. In this study, we attempt to develop a simple and reliable method for assessing the risk of damage to seawalls based on stable river channel theory. This study aims to increase the number of data including undamaged areas and to use indicators that can be calculated without using the flow conditions at the time of damage, leading to damage risk assessment without prior information on the damaged areas. The evaluation indices were calculated based on the stable flow theory and the shape of the river channel cross-section, and the relationship between the size of the index and the presence of damage was examined. As a result, it was possible to evaluate some damage cases to some extent, but it was not possible to formulate a general risk assessment and its index.