

Computing Safe Dike Heights at Minimal Costs

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Abstract: Safe dike heights are crucial for protecting life in the Netherlands and many other regions of the world. We discuss issues that arise when modeling the probability of floods, the expected damage and measures to prevent floods. Our aim is to minimize the sum of future investing costs and expected damage over a long period (of about 300 years). We present some MINLP optimization models and a dynamic programming model, as well as some computational results.

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