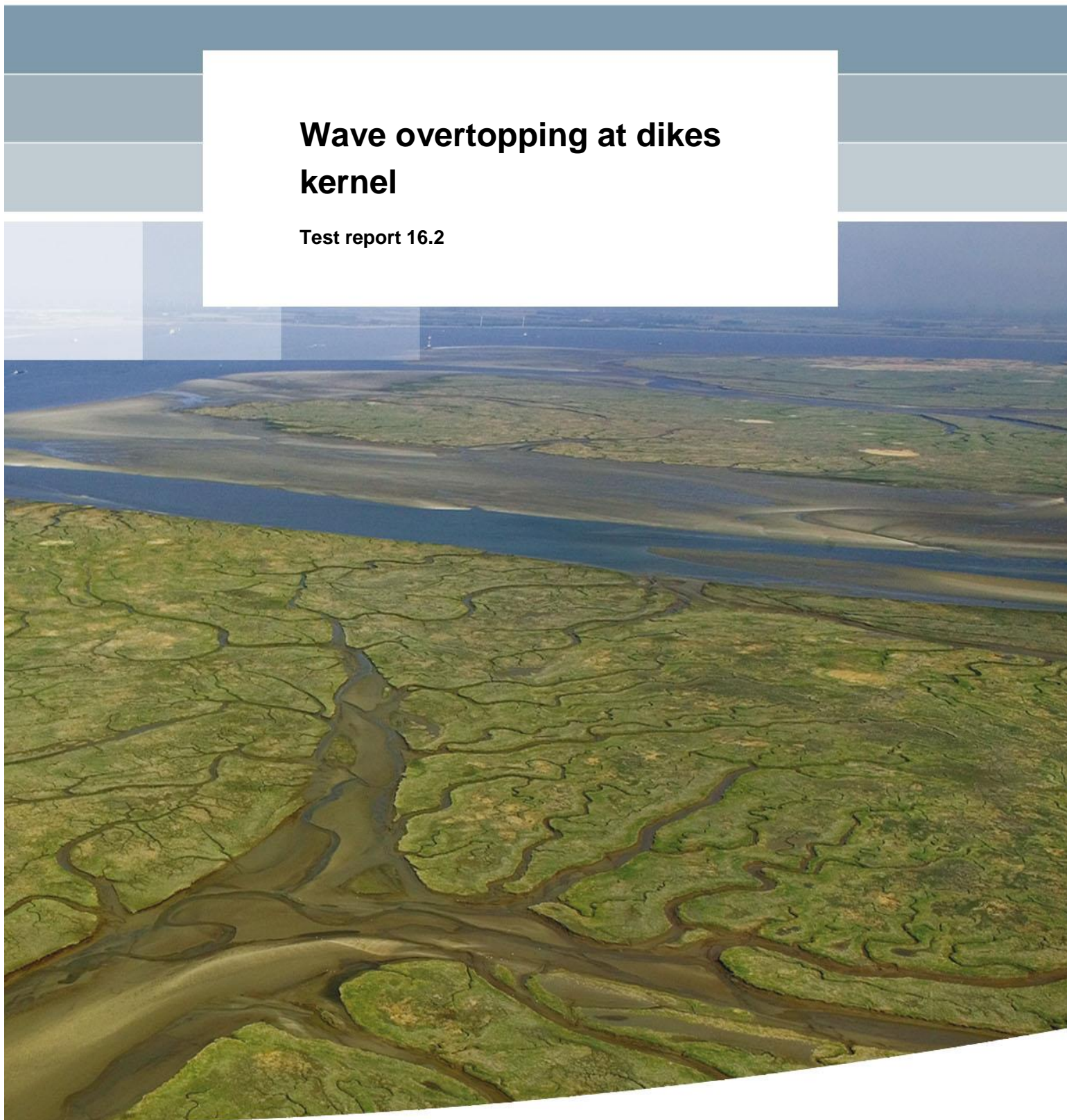


Wave overtopping at dikes kernel

Test report 16.2



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Test report 16.2

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1230095-002

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Summary




This document describes the test results for the 16.2 release for the 'wave overtopping at dikes' kernel. It also contains some recommendations for further improvements on the test procedure.

Samenvatting

Dit document beschrijft de testresultaten voor de 16.2 release voor rekenkern "golfoverslag bij dijken". Het bevat ook enkele aanbevelingen voor verbeteringen van de testprocedure.

References

KPP 2016 Waterveiligheidsinstrumentarium - VTV Tools.

Version	Date	Author	Initials	Review	Initials	Approval	Initials
1.0	dec. 2016	E.J. Spee		H. van Putten		M. van Gent	

State

final

Contents

1 Introduction	1
1.1 About this document	1
1.2 Brief description of the changes in the test procedure	1
2 Test results	1
2.1 Results from TeamCity	1
3 Discussion	2
3.1 Introduction	2
3.2 Shortcomings in strategy	2
3.3 Recommendations	2
4 References	3

1 Introduction

1.1 About this document

This document describes the test results for the 16.2 release for the 'wave overtopping at dikes' kernel. The functional design of this kernel is given in (De Waal, 2015a).

Compared to the 16.1 release, the test bench is extended with new tests, which are related to issues resolved between the 16.1 and 16.2 release.

1.2 Brief description of the changes in the test procedure

The test bench is extended with the following 14 new tests:

Name tests	Description
omkeerVariantIssue34A, B & C	Integration test fix for endless loop in omkeervariant
omkeerVariantIssue35A, B & C	Integration test fix for endless loop in omkeervariant
omkeerVariantIssue36A & B	Integration test fix in omkeervariant with water level at toe
omkeerVariantIssue42A & B	Integration test fix in omkeervariant with water level at berm
TestRoughnessIssue44A & B	Integration test fix to avoid error in roughness calculation with very small waves
testCalculateGammaF & testCalculateGammaF2	Unit test for fix to avoid error in roughness calculation with very small waves

There are no changes in the tests belonging to the 16.1 release, and they still pass. All these tests are described in (Waal, J.P. de, 2015b).

2 Test results

2.1 Results from TeamCity

The test bench runs automatically on TeamCity, a well-known continuous integration environment. It compares actual results with results from a reference run. Between the 16.1 and 16.2 release there was no update of the references.

The overtopping project can be found here:

https://build.deltares.nl/viewType.html?buildTypeId=VtvInstrumentarium_DikesOvertopping

The results are summarized below:

Summary:	
Number of tests run:	170
Number of tests ignored:	0
Number of tests failed:	0
Number of failed assertions:	0
Number of runs needed to complete the tests:	1

We conclude that all tests are succeeded, both the 156 old and 14 new tests.

Including the new tests, it takes only 4 s to run all tests.

3 Discussion

3.1 Introduction

The test series described in the earlier chapters is quite extensive and is very useful for testing the wave overtopping kernel. However, there are also some shortcomings of this test set, some of which are considered serious enough to mention in this report.

3.2 Shortcomings in strategy

- There are only integration tests, except for the two new unit tests related to the problem with roughness calculation with very small waves. In this report, integration tests test a complete overtopping or 'omkeervariant' calculation; where unit tests are on specific parts of the computation.
- The code coverage is unknown.

3.3 Recommendations

- It is recommended to add both unit and integration tests, when problems are reported which must be fixed.
- Extend the test environment with a tool to determine the code coverage.

4 References

Waal, J.P. de, 2015a. Wave overtopping at dikes kernel. Functional design. Deltares report 1220043-002, september 2015.

Waal, J.P. de, 2015b. Wave overtopping at dikes kernel. Test Report. Deltares report, september 2015.