



Brigham Young University
BYU ScholarsArchive

International Congress on Environmental
Modelling and Software

10th International Congress on Environmental
Modelling and Software - Brussels, Belgium -
June 2020

Sep 16th, 4:20 PM - 4:40 PM

Model approach for assessing and forecasting bathing water quality along the Flemish coast

Bart Verheyen
IMDC nv, Belgium

Follow this and additional works at: <https://scholarsarchive.byu.edu/iemssconference>

Verheyen, Bart, "Model approach for assessing and forecasting bathing water quality along the Flemish coast" (2020). *International Congress on Environmental Modelling and Software*. 18.
<https://scholarsarchive.byu.edu/iemssconference/2020/C0/18>

This Event is brought to you for free and open access by the Civil and Environmental Engineering at BYU ScholarsArchive. It has been accepted for inclusion in International Congress on Environmental Modelling and Software by an authorized administrator of BYU ScholarsArchive. For more information, please contact ellen_amatangelo@byu.edu.

Model approach for assessing and forecasting bathing water quality along the Flemish coast

Verheyen Bart^a, Leyssen Gert^a, Breugem Alexander^a, Rohit Kulkarni^a, Van Rooy Liesbet^b,
Pelicaen Joachim^c

^a IMDC nv (bart.verheyen@imdc.be)

^b Agenschap Zorg en Gezondheid

^c Vlaamse Milieumaatschappij

Abstract: In Belgium, the Flemish Agency for Care and Health and the Flanders Environment Agency are jointly responsible for monitoring the bathing water quality at beaches along the Flemish coast. Intense rainfall events can cause overloaded sewage systems to overflow into harbours and the sea. These polluted discharges can potentially impact the beach water quality along the Flemish Coast. As part of the water quality monitoring tools, both agencies are preparing to implement an operational forecasting and warning system to inform bathers about beach water quality along the coastline. This system has been setup to combine data and forecasts from different sources (meteorological forecasts, tidal predictions, operational data of overflow pumps,...), perform a water quality forecast, assess water quality criteria and provide warnings. The development of the operational forecasting system is supported by data analysis, monitoring campaigns and hydro dynamical and water quality modelling experiences from previous studies for specific coastal towns. As part of the tool, a performant hydrodynamic and water quality numerical model has been set up, calibrated and incorporated in the system. The aim of the final operational forecasting system will be to automatically run a forecast triggered by storm discharge events to assess the impact on the water quality and if the water quality is below the standard to inform bathers not to swim within a few hours' notice. This paper will present the setup of the operational forecasting tool.

Keywords: Bathing water quality; Numerical modelling; Forecasting; Faecal bacteria