

SINBAD Research Project

Sediment transport research

UK and Netherlands



Flume testing in the laboratory

Client: University of Aberdeen (UoA)

Services provided:

- Industry perspective review
- Peer review

SINBAD is a research project sponsored jointly by the EPSRC in the UK and by STW in the Netherlands. The work is principally being undertaken by the Universities of Aberdeen, Liverpool and Twente in the Netherlands. The project is concerned with developing more advanced algorithms to model sand transport under wave action.

Currently available practical models are almost exclusively based on measured transport rates and processes from laboratory experiments involving regular, non-breaking waves. The fact that waves in reality are irregular and are breaking in most cases of practical interest raises the question: what key processes associated with wave irregularity and wave breaking need to be included in a practical sand transport model. Hence, the research has two main aims: (i) to substantially improve understanding of the near-bed hydrodynamics and sand transport processes occurring under large-scale irregular and breaking wave conditions; and (ii) to develop a new practical model for predicting sand transport under waves, accounting for wave irregularity and wave breaking in a way that is well founded on experimental data and understanding of the fundamental processes.

Together with an earlier research programme (SANTOSS) ENBE has, since 2009, been engaged to follow the research work from an industry user perspective, and to feedback advice at the annual SINBAD user workshops.

Further to this, ENBE was commissioned by the Environment Agency in the UK to peer review an assessment by HR Wallingford of the earlier project work (SANTOSS).

Further information is available on the SINBAD project website:

<http://www.abdn.ac.uk/engineering/research/sinbad-project-216.php>