



## Measuring and modelling sediment transport on a macrotidal ridge and runnel beach: an intercomparison

Submitted by Emmanuel Lemoine on Tue, 09/16/2014 - 12:05

Titre	Measuring and modelling sediment transport on a macrotidal ridge and runnel beach: an intercomparison
Type de publication	Article de revue
Auteur	Voulgaris, G. [1], Simmonds, D. [2], Michel, Denis [3], Howa, Hélène [4], Collins, M.-B. [5], Huntley, D.-A. [6]
Editeur	Coastal Education and Research Foundation
Type	Article scientifique dans une revue à comité de lecture
Année	1998
Langue	Anglais
Date	1998
Numéro	1
Pagination	315 - 330
Volume	14
Titre de la revue	Journal of Coastal Research
Résumé en anglais	<p>Observations of hydrodynamics, fluorescent tracer dispersal and beach morphology were acquired in the intertidal zone of a macrotidal ridge and runnel beach. High frequency hydrodynamic data from pressure transducers and electromagnetic current meters were used to describe flow patterns in the intertidal zone while sediment transport rates were estimated using energetics and empirical models. Results from fluorescent tracer experiments provided information on net sediment movement over periods ranging from one to five tidal cycles whereas morphometric analysis was carried out to determine net beach movement during a period of 24 tidal cycles. Comparison of the results showed that sediment transport based on the hydrodynamic measurements did not agree with sediment movement derived using the tracer and morphometric methods. This disagreement is because the latter methods integrate processes occurring throughout the whole tidal cycle including those at very low water depths (swash zone processes). Hydrodynamic data were limited to periods of the tidal cycle where the mean water depth was greater than 0.5 m. Such limitation, imposed by the physical dimensions, principle of operation and installation procedures of the instruments is common in nearshore studies. Sediment transport results obtained by using hydrodynamic data obtained in macrotidal areas would be incomplete if swash-zone processes are not covered by the sampling scheme. However, comparison of results obtained for shorter periods (i.e. excluding shallow water) with those from other methods that integrate over the whole tidal cycle can be used to extract information on sedimentary processes for periods where no direct data are available.</p>
URL de la notice	<a href="http://okina.univ-angers.fr/publications/ua3994">http://okina.univ-angers.fr/publications/ua3994</a> [7]

## **Liens**

- [1] [http://okina.univ-angers.fr/publications?f\[author\]=6854](http://okina.univ-angers.fr/publications?f[author]=6854)
- [2] [http://okina.univ-angers.fr/publications?f\[author\]=6855](http://okina.univ-angers.fr/publications?f[author]=6855)
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=6688](http://okina.univ-angers.fr/publications?f[author]=6688)
- [4] <http://okina.univ-angers.fr/he.ho/publications>
- [5] [http://okina.univ-angers.fr/publications?f\[author\]=6856](http://okina.univ-angers.fr/publications?f[author]=6856)
- [6] [http://okina.univ-angers.fr/publications?f\[author\]=6857](http://okina.univ-angers.fr/publications?f[author]=6857)
- [7] <http://okina.univ-angers.fr/publications/ua3994>

Publié sur *Okina* (<http://okina.univ-angers.fr>)