



**ПОДВОДНЫЕ ПЕСЧАНЫЕ ВАЛЫ:  
НЕКОТОРЫЕ СВОЙСТВА И ПОВЕДЕНИЕ  
НА РАЗЛИЧНЫХ МАСШТАБАХ ВРЕМЕНИ**

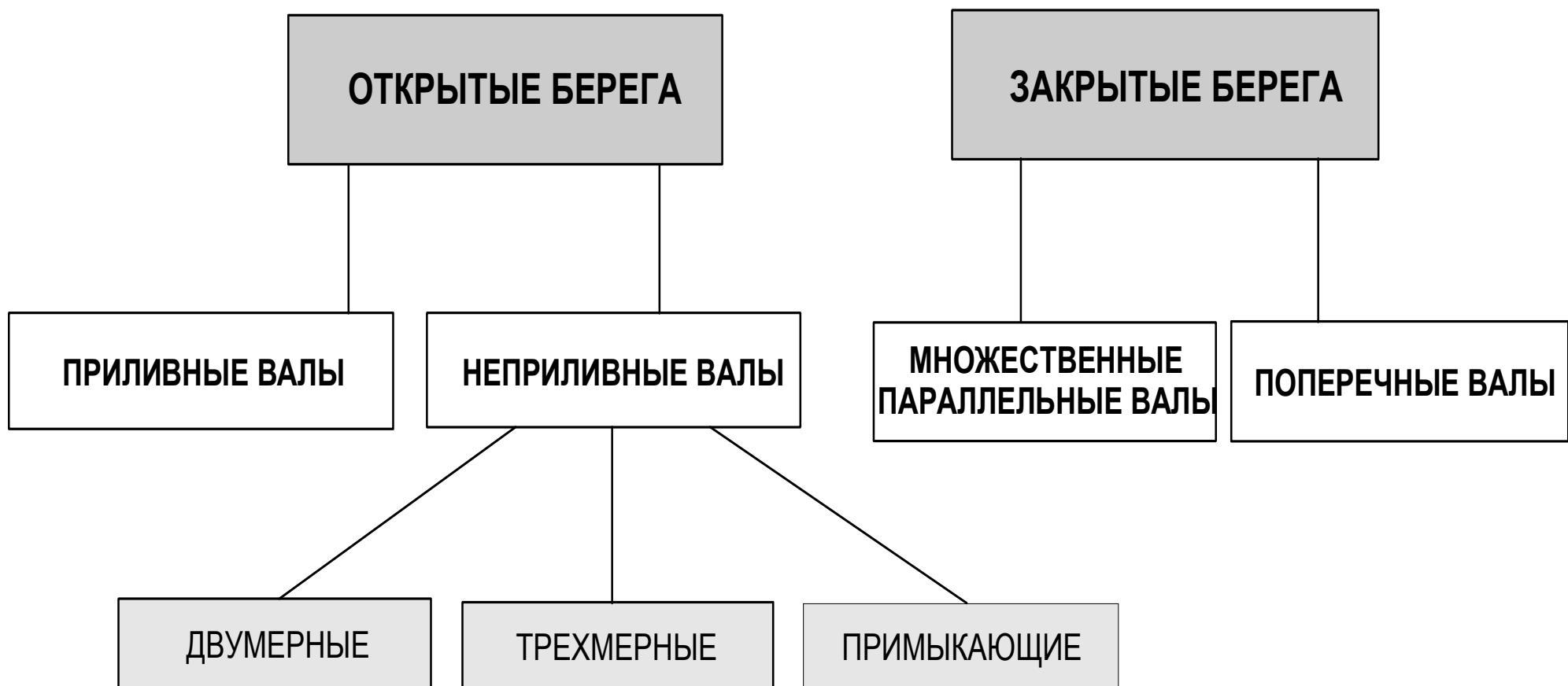
**И.О.Леонтьев**

**Институт океанологии им. П.П.Ширшова РАН**

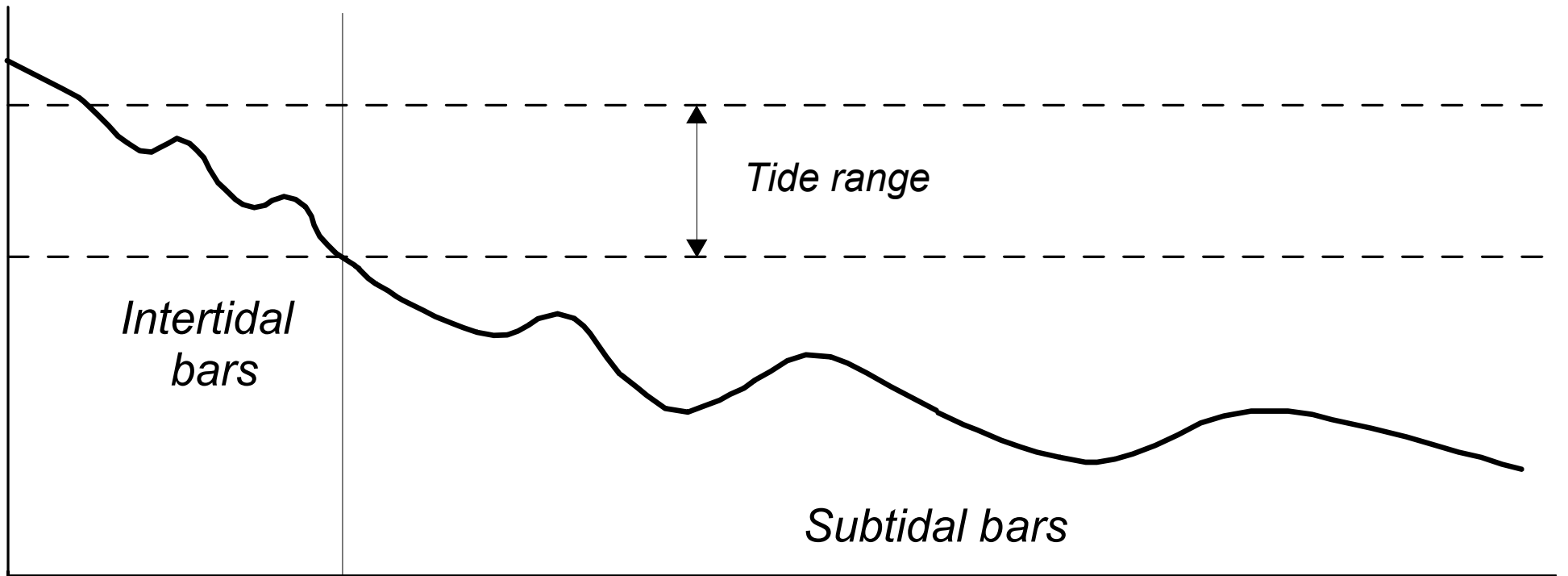
**NEARSHORE SAND BARS:  
SOME PROPERTIES AND BEHAVIOUR  
AT DIFFERENT TIME SCALES**

**I.O.Leont'yev**

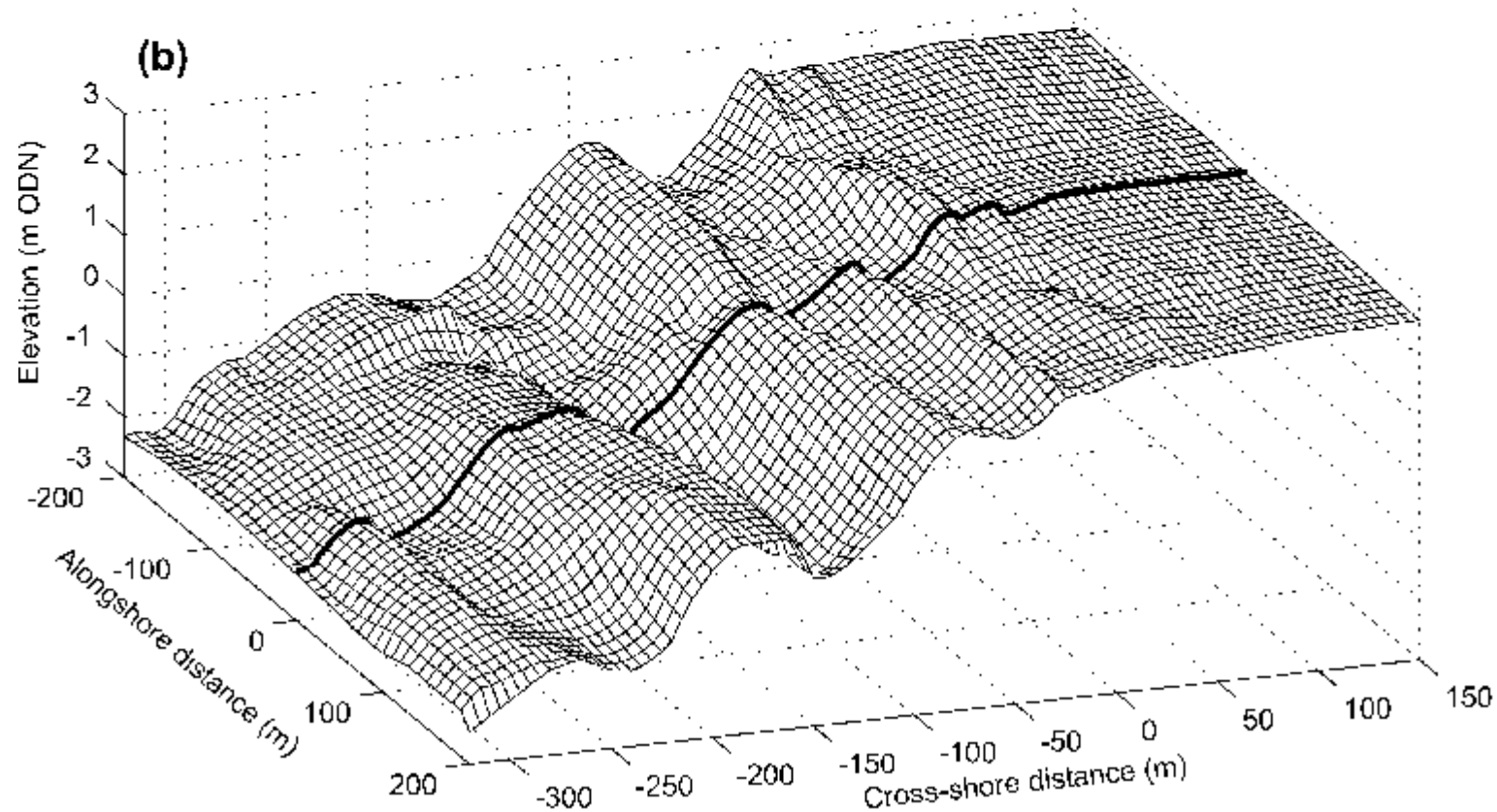
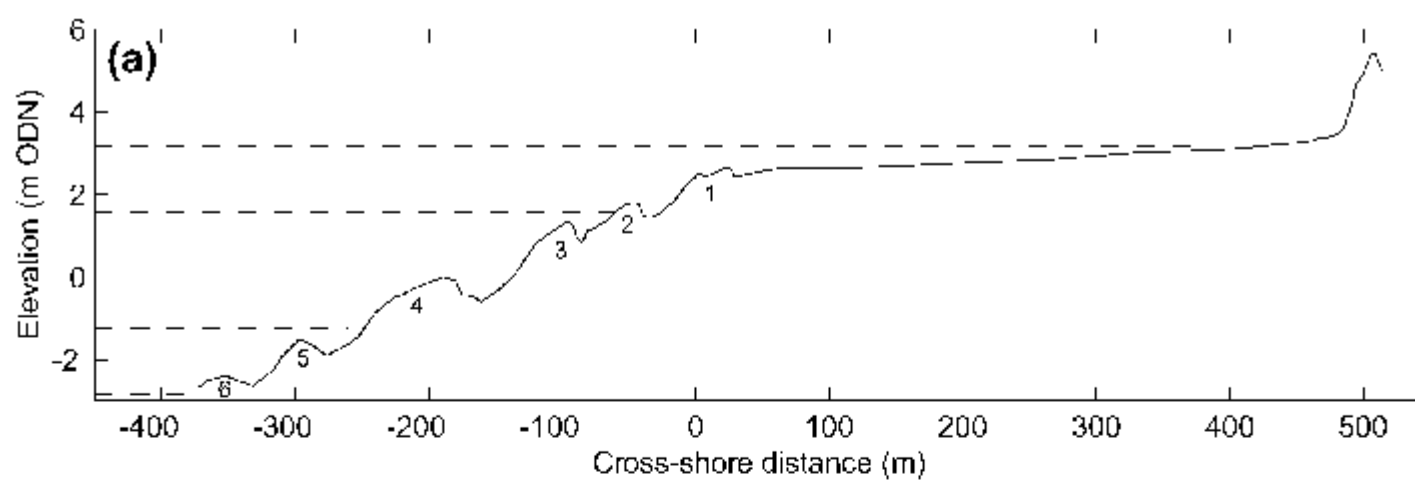
**P.P.Shirshov Institute of Oceanology RAS**



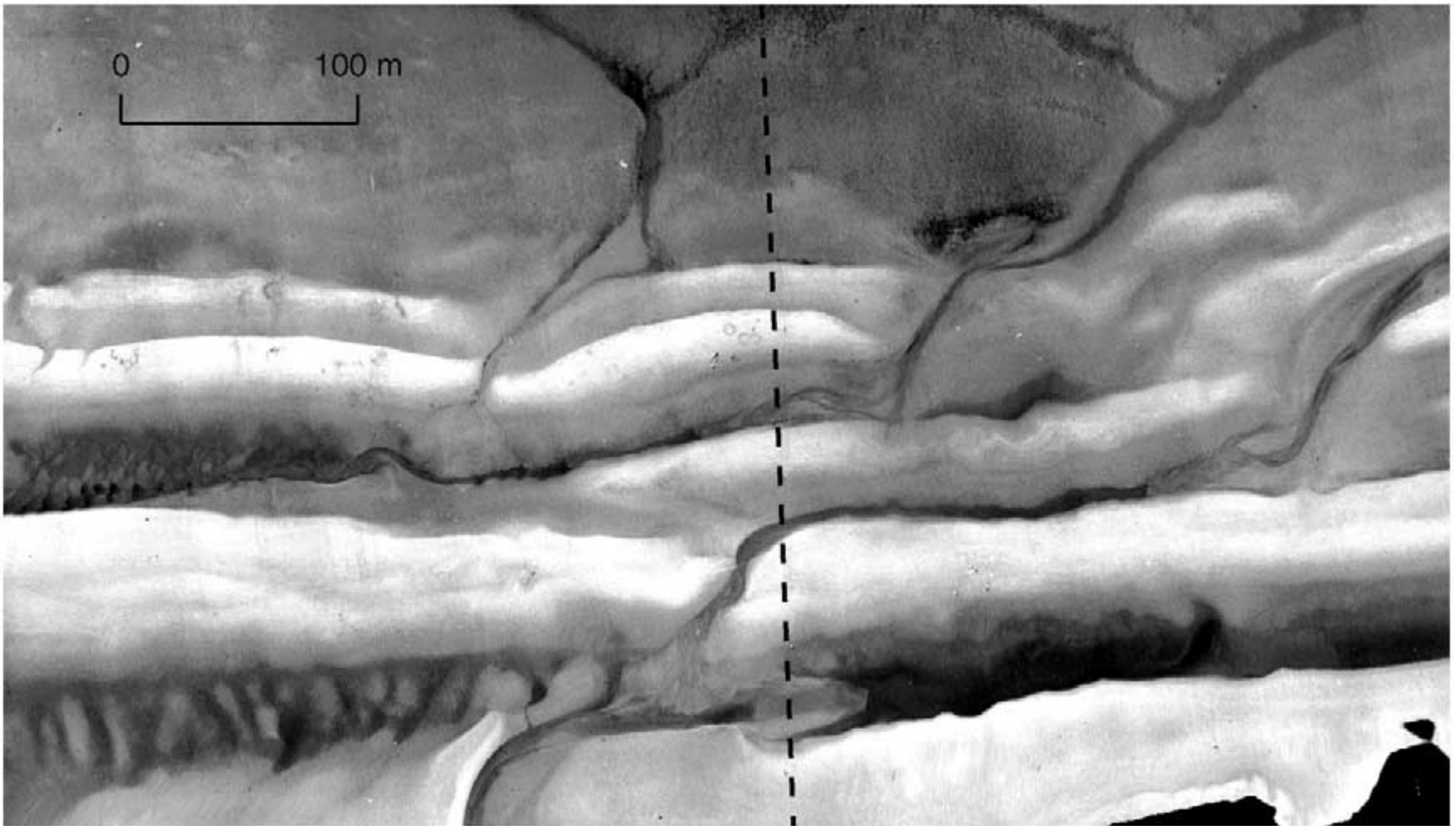
2. Bar types according to Wijnberg and Kroon (2002)



### 3. Bars on open coast



4. Intertidal bars, North Lincolnshire coast, England, (Kroon, Masselink, 2002)



5. Intertidal bars – ridge-and-runnel topography (North Lincolnshire coast, England)



6. Two-dimensional bars, Noordwijk, The Netherlands (Wijnberg and Kroon, 2002)



7. Three-dimensional and shore-attached bars, Palm Beach, NSW, Australia



8. Three-dimensional and shore-attached bars, Agate Beach, Oregon, USA



# МЕХАНИЗМЫ ФОРМИРОВАНИЯ ВАЛОВ

ОБРУШЕНИЕ ВОЛН

Конвергенция течений  
Диффузия взвеси  
Адвекция взвеси

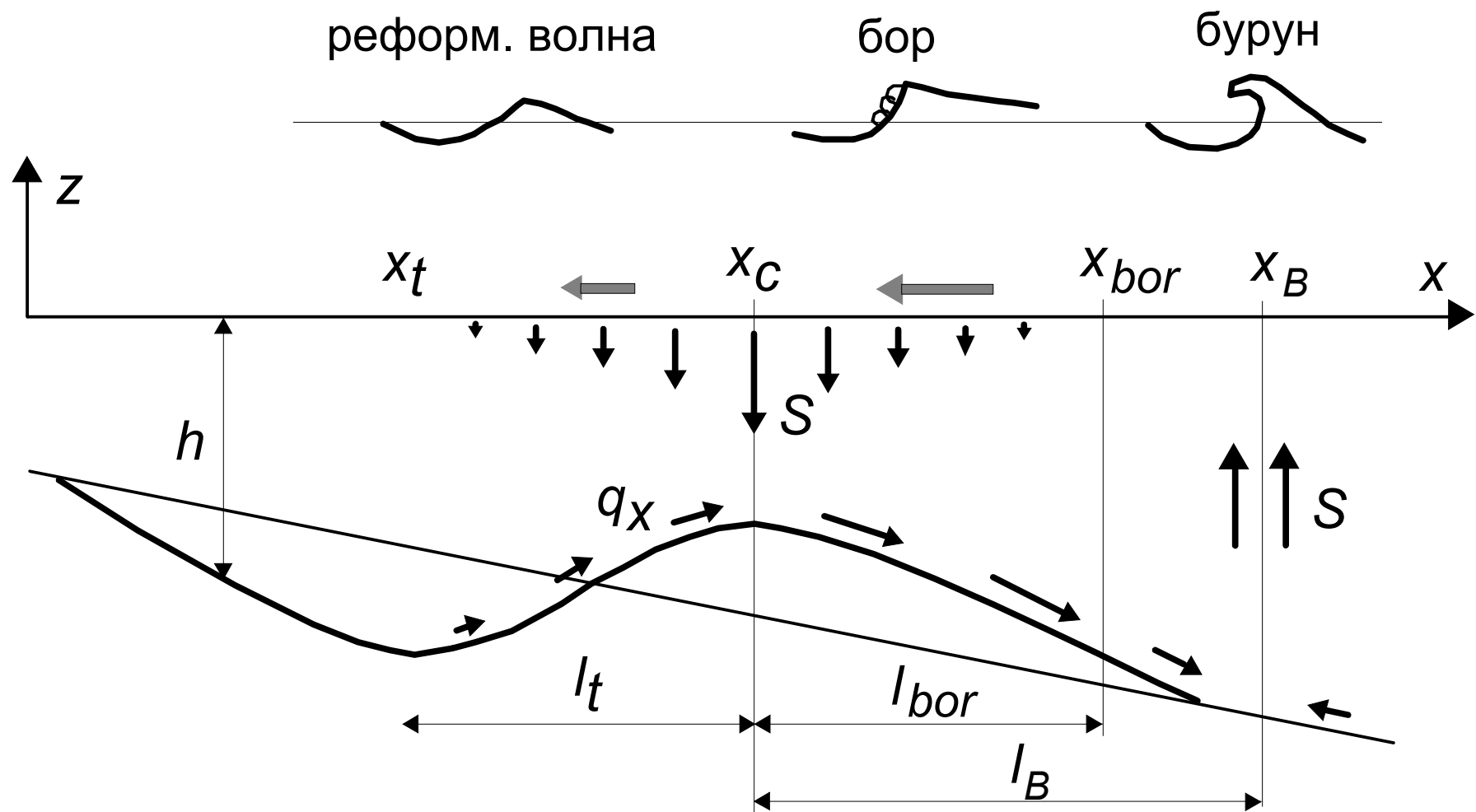
ИГВ

Чередующиеся конвергенция  
и дивергенция течений  
Пространственные колебания  
скорости диссипации энергии

САМООРГАНИЗАЦИЯ

Нелинейное взаимодействие  
в системе  
волны - течения - морфология

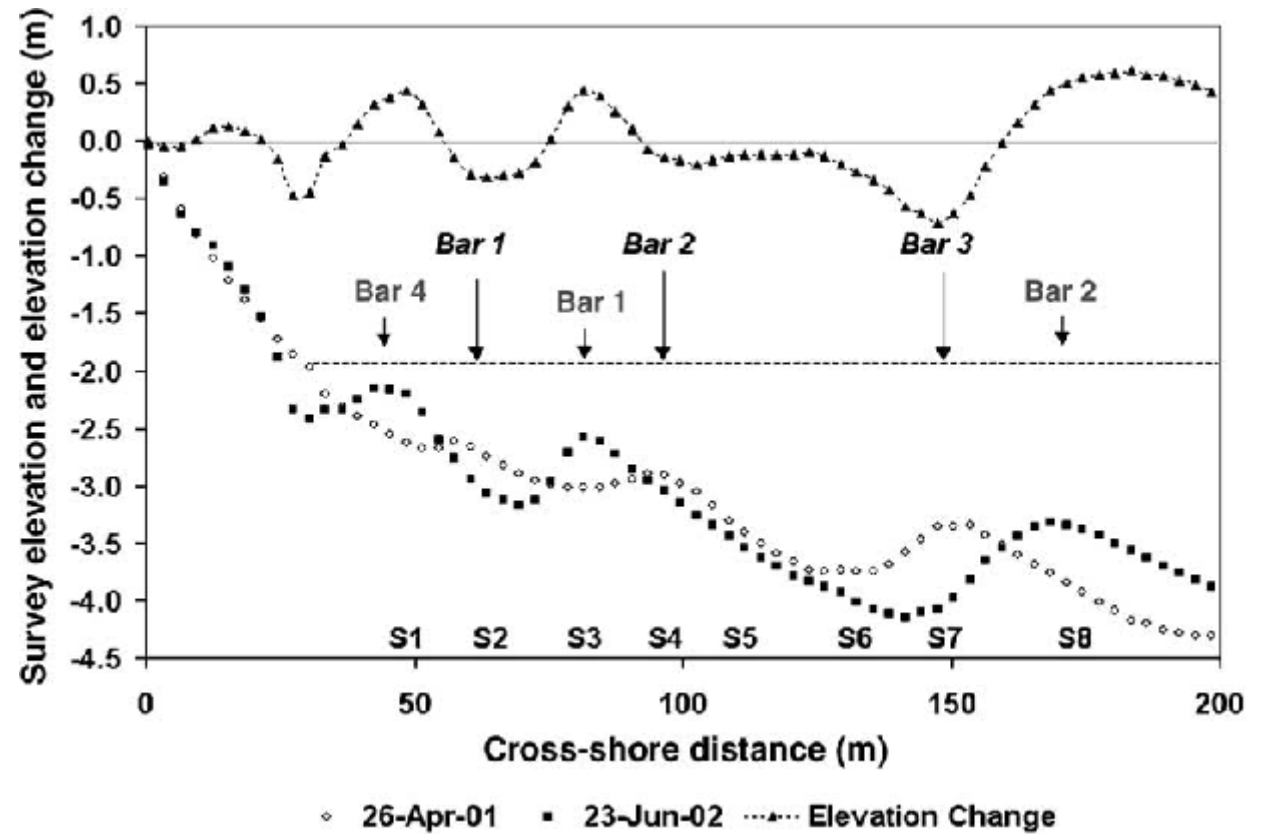
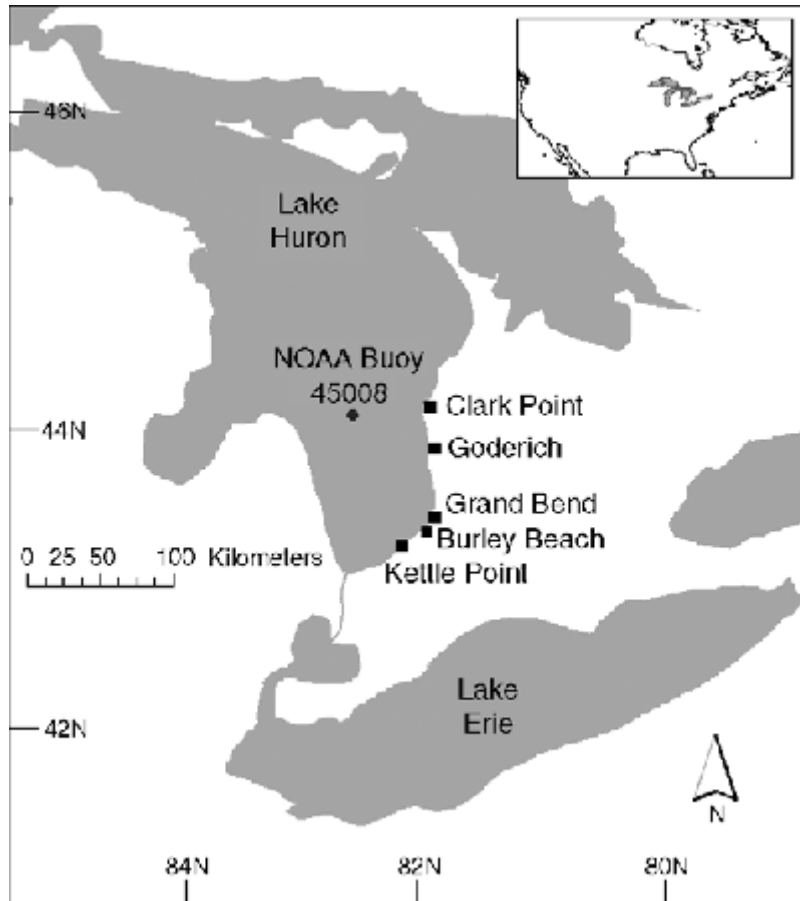
9. Mechanisms of bar formation



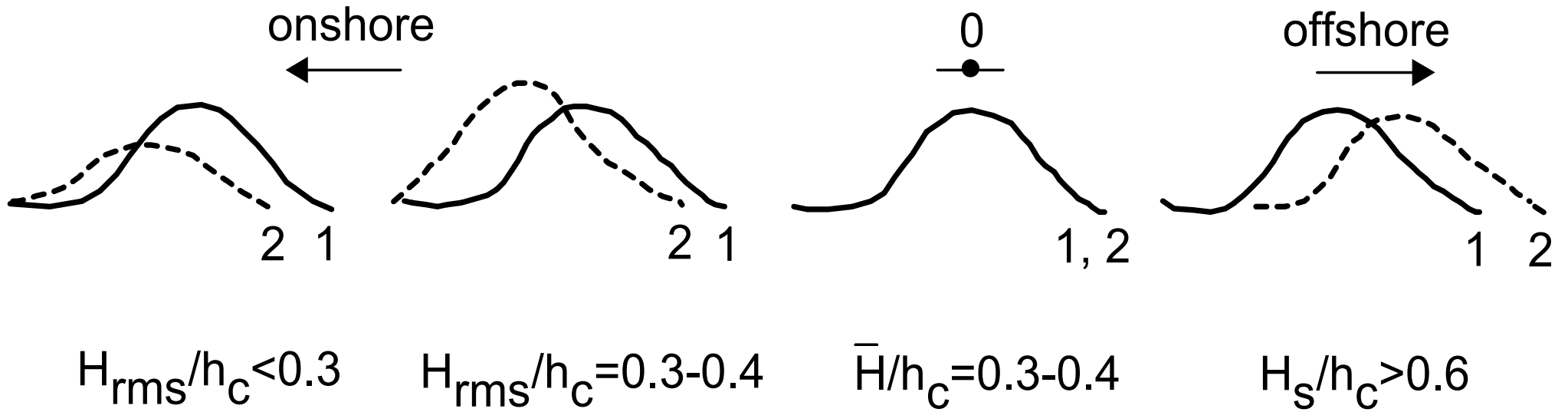
10. Formation of bar due to advection and subsequent falling of suspension



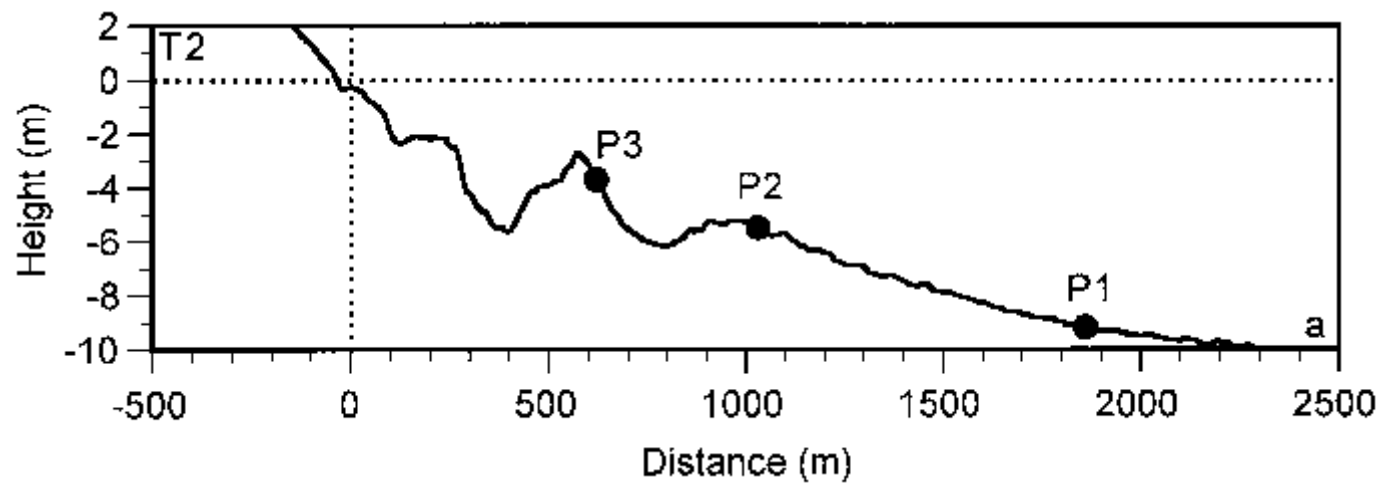
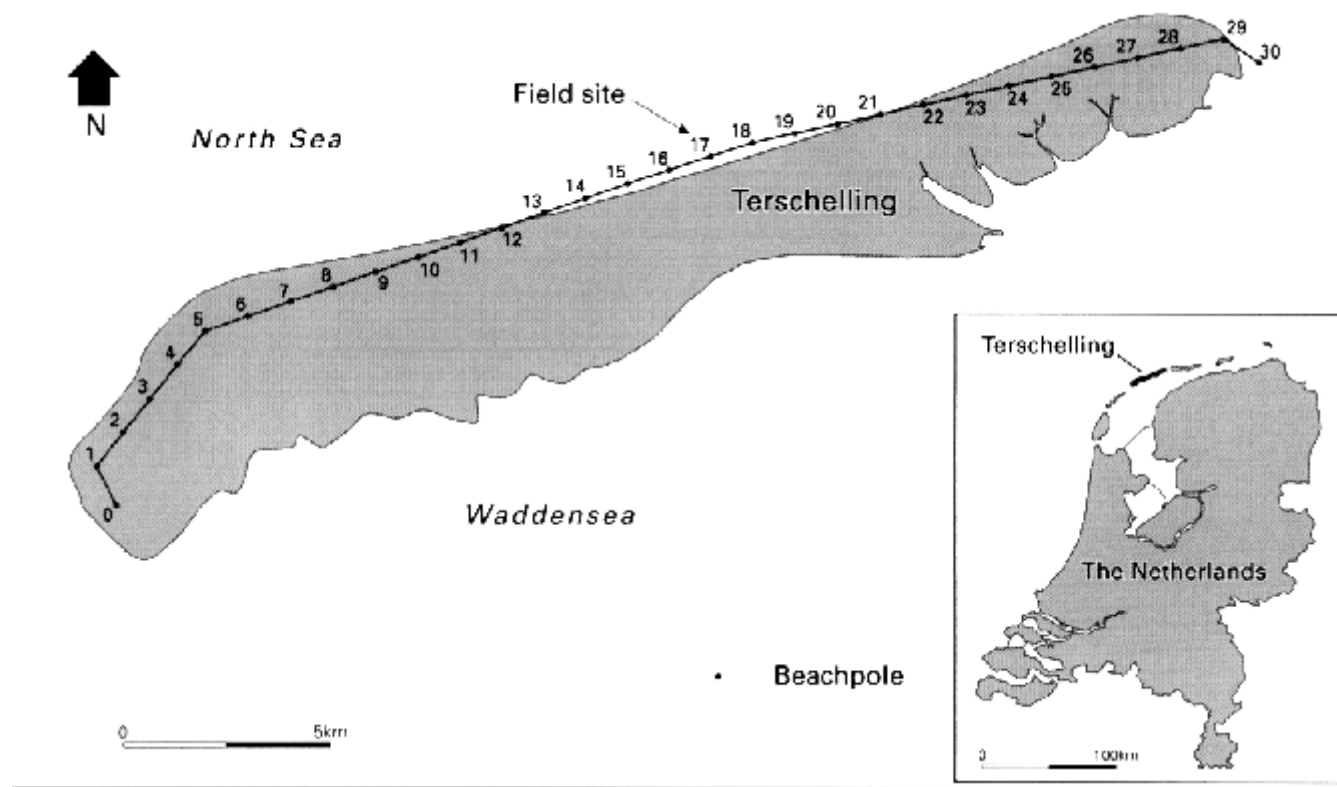
11. Multiple-bar system in Truro, Massachusetts, Cape Cod Bay (Moore et al., 2003)



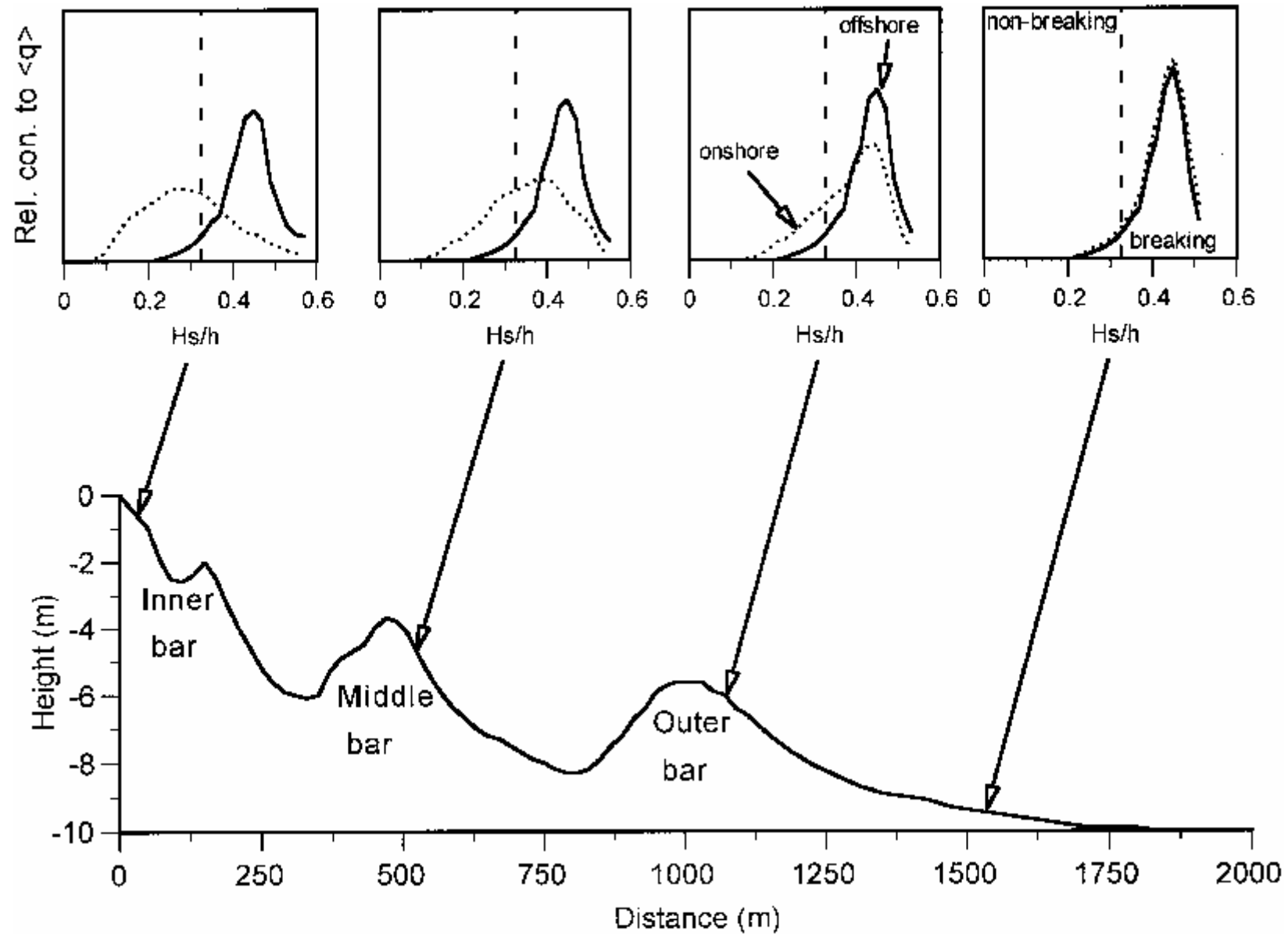
12. Bar system in Burley Beach, Lake Huron (Houser, Greenwood, 2005)



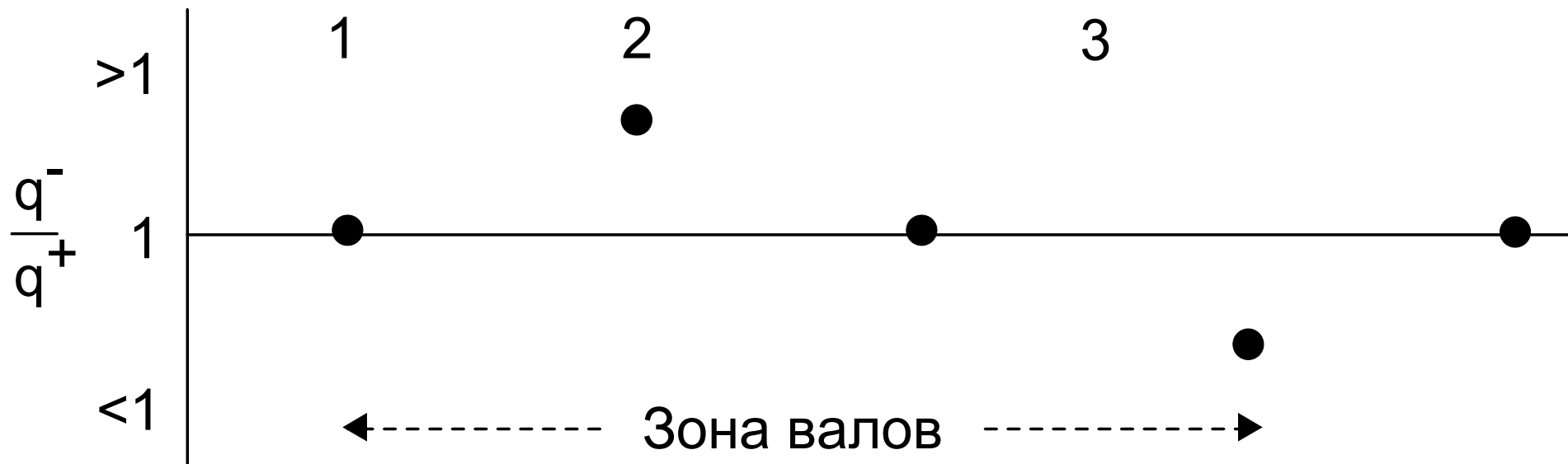
13. Migrations of bars depending on relative wave heights



14. Bar system on barrier island of Terschelling (Ruessink, Terwindt, 2000)

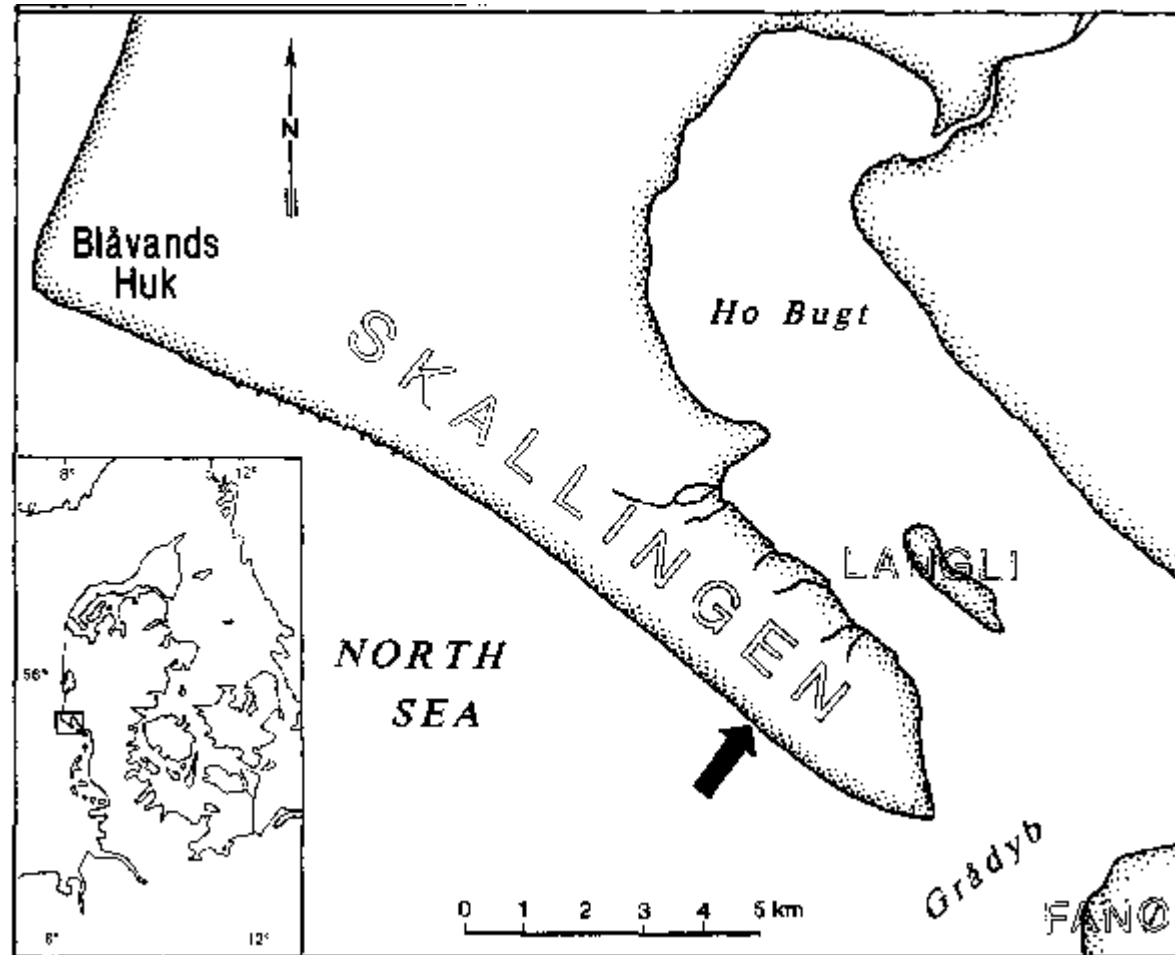


15. Relative contributions of non-breaking and breaking wave conditions to the net transport over the bar zone

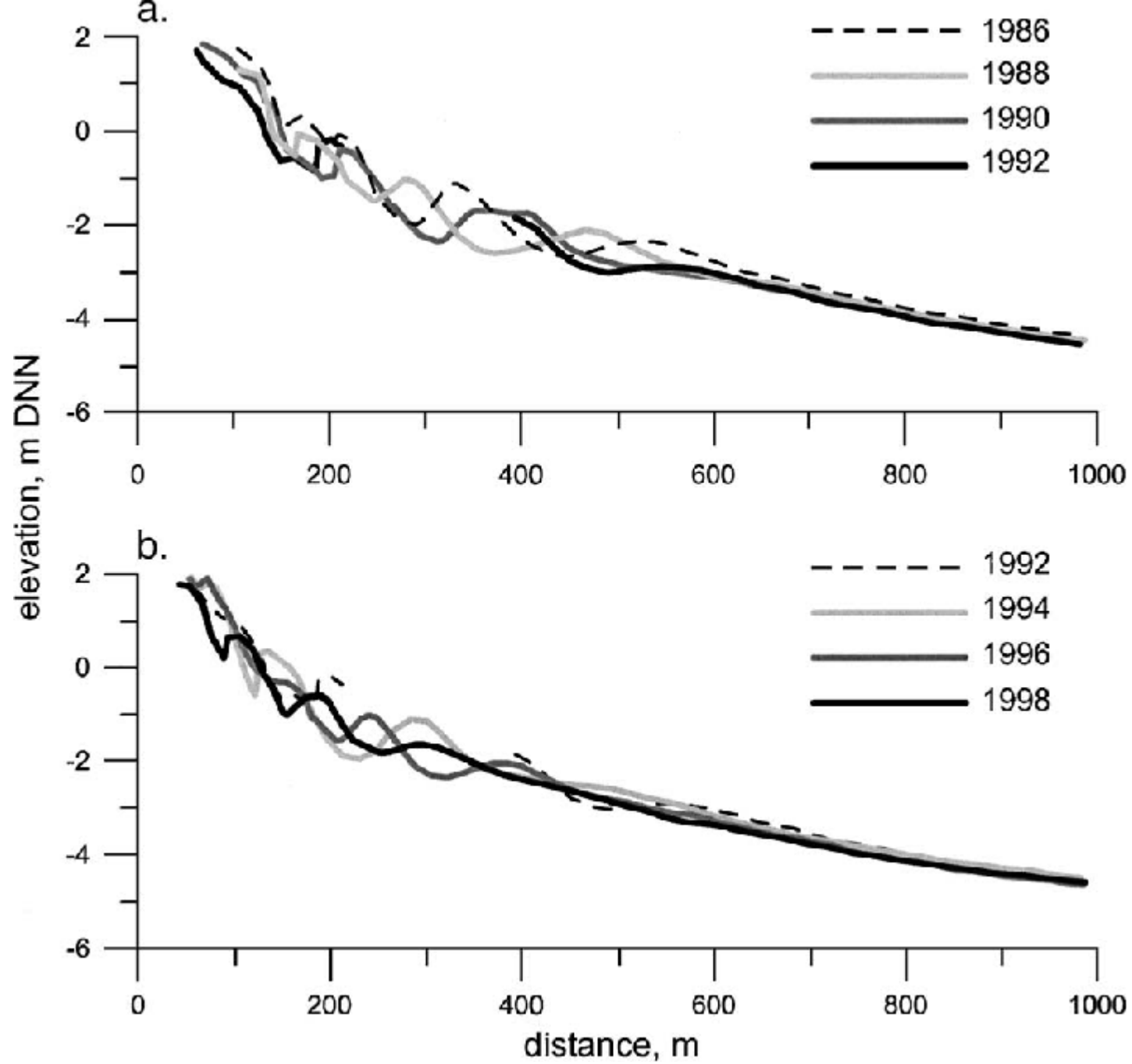


16. Stages in bar evolution on Holland coasts (Ruessink, Terwindt, 2000)

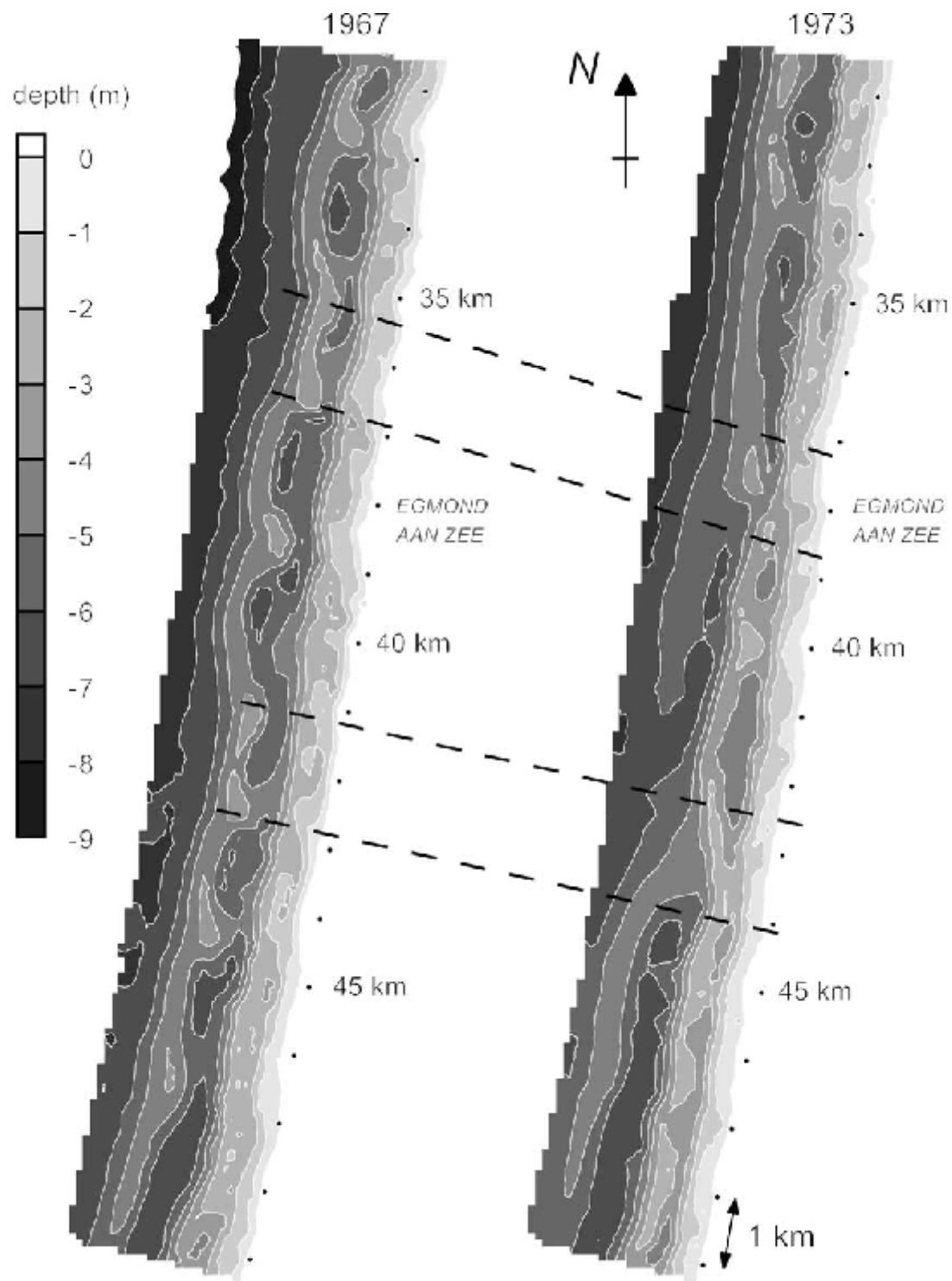




17. Site Scallingen, west coast of Denmark



18. Evolution of bar system in Skallingen (Aagaard et al., 2004)



cross-shore scale exaggerated 3 times

19. Bottom topography evolution along the North-Holland coast (Wijnberg and Kroon, 2002)



Благодарю за внимание