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# Exploring role of the maritime environment in the colonisation of Australasia, by 50,000 years ago

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## Résumé

The maritime environment plays a central role in the migration to Australasia by modern humans. This migration took place from Southeast Asia, and straits and seas had to be crossed to reach the continent. Recent advances in archaeological and genomic research have pushed the timing of the migration back to at least 50,000 years ago. Climatic changes around this time caused the global mean sea level to fall to around 75–80 m below the present level, exposing parts of the continental shelves of Southeast Asia and Australasia, and changing the environment encountered by migrating people.

It is clear that water crossings must have been made to reach Australasia. However, the archaeological record is fragmented, and there is no direct evidence of seafaring this far back in time. The seafaring capabilities and skills of the early colonisers are strongly debated, and the nature of the colonisation process is still poorly understood. To better understand this process, and explore questions on human behaviour during this important event in the peopling of world, it is crucial to better understand how the maritime environment, especially open ocean and tidal currents, affected movement over sea.

Here, dynamic effects of the maritime environment on seafaring are explored with high-resolution computer models of open ocean and coastal tidal circulation, forced with modern-day climate data. Lowered sea levels are simulated to provide a first examination of how changes in environmental conditions could have affected timescales and routes to Australasia. Initial results indicate a strong but variable influence of currents on movement, which should be considered in the debate on the nature of the colonisation of Australasia.

**Mots-Clés:** maritime, migration, Australia, Upper Pleistocene

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