



## **Formation and Behaviour of Aeolian Streamers**

**A.C.W. Baas**

Environmental Monitoring and Modelling Research Group, Department of Geography, King's College London (andreas.baas@kcl.ac.uk)

Aeolian sand streamers are an important manifestation of spatial and temporal patterning of sand transport by wind on beaches and in deserts. This contribution presents the results of extensive investigations of the formation and behaviour of aeolian streamers and sand transport patterns. Field experiments were conducted in coastal and desert environments, where spatio-temporal transport variability and associated internal boundary layer flow characteristics were assessed with a variety of instruments. Streamers were directly measured with a transverse array of saltation sensors, while the wind field was monitored with cup-anemometry and a rake of hot-film probes (thermal anemometry). Mapping of spatio-temporal transport variability at the saltation sensor array facilitated the identification of streamers and determination of characteristic dimensions and time-scales. The hot-film probes enabled the detection of coherent flow structures in the wind field that were associated with streamers, such as streamwise vortices and burst-sweep events. The selection and preparation of two different field sites allowed for an investigation of the role of sand surface conditions, such as surface moisture and micro-topography, on the development of streamers. In addition to a presentation of results and conclusions of the research, this presentation discusses important implications for the modelling and assessment of aeolian sediment transport by boundary layer turbulence under field conditions.