

## The north-eastern aeolian 'European Sand Belt' as potential record of environmental changes: A case study from Eastern Latvia and Southern Estonia - DTU Orbit (09/11/2017)

### The north-eastern aeolian 'European Sand Belt' as potential record of environmental changes: A case study from Eastern Latvia and Southern Estonia

The Latvian and Estonian inland dunes belong to the north-eastern part of the 'European Sand Belt' (ESB). These dunes are widely distributed over broad glaciolacustrine plains and Late Glacial alluvial deltas, considered to be potential sources for the aeolian material. Little is known about these aeolian sediments and their substratum; here we present a detailed sedimentary structural and textural characterisation together with a luminescence-based chronology. Through a comparison between grain-size, rounding of quartz grains and surface characteristics in medium/coarse (0.5-0.8 mm) sand, and the light mineral content, we found an alternation of aeolian and periglacial components. Further, short-lasting aeolian abrasion and/or transportation periods, and a significant contribution of a nearby sediment source are suggested. Luminescence dating points to aeolian sand accumulation and dune formation between ~16 ka and ~9 ka. However, we also observed some presumably watertable controlled environmental conditions at ~13 ka; this corresponds with the occurrence of an ice-dammed/proglacial lake.

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