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The impact of sand composition on aeolian vertical mass flux distribution

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The impact of sand composition and texture on vertical distribution of horizontal mass flux under natural conditions has been analysed. The research was carried out on two beaches. One beach, located at the middle part of South Baltic coast (Poland), was composed of very well- and well-sorted fine to medium quartz sand. The other beach, located at the Atlantic coast south of Tarfaya (Morocco), was composed of well sorted fine sand composed of carbonate (mainly shell detritus) and quartz grains. The mass flux profiles were measured using vertical 0.5 m high sand traps divided into 40 chambers, each 0.01 m wide and 0.0127 m high. Measurements were made on dry and moist surfaces during alongshore winds (8-14 m/s), i.e. during conditions of relatively constant sand concentration in the wind boundary layer. The sand on the moist surface was transported higher than on the dry surface and in general, under the same wind and surface conditions carbonate grains were transported higher than quartz grains.
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