



## **Characteristics of winds and wind forecasts at dust sources in complex terrain**

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The quality of the state-of-the-art numerical weather forecast is explored during events of severe uptake of dust into the atmosphere in Iceland. Such events are typically associated with locally strong winds of orographic nature. The study reveals that these winds are not as well predicted as non-local windstorms leaving dust-storms an even greater challenge than previously considered. One of the reasons for errors in the wind prediction is the non-stationary nature of the winds which are in many cases associated with gravity waves. Another reason for the errors is the limited extent of the windstorms and strong spatial gradients in wind speed.