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## Investigation of Unfavorable Winds Associated with Complex Terrain using Detached Eddy Simulation

Unfavorable winds are often found in complex terrain and these complicated flow phenomena such as flow separation and vortex shedding can cause difficulties in siting of wind turbines. This paper uses a DES method to depict the unsteady flows observed in the vicinity of a wind turbine location. A coastal site is selected for this study. It has been observed that the variations of wind velocities and wind directions may be large across the rotor area. The large differences in wind velocity and wind direction can cause problems to a wind turbine in operation. The CFD simulations may provide useful information to siting engineers and decision makers. As a result, wind risks associated with complex terrain may be identified to avoid unnecessary financial losses in the investment of a wind farm.

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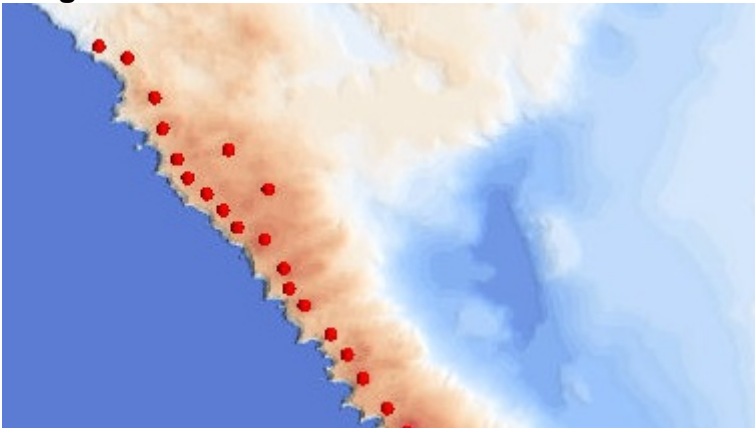
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