## Flow Characterization in Complex Terrain for Aviation Safety

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**Abstract :** The paper describes the ability of a high-resolution Computational Fluid Dynamics model to predict terrain-induced turbulence and wind shear close to the ground. Various sensitivity studies to choose the optimal simulation setup for modeling the flow characteristics in a complex terrain are presented. The capabilities of the model are demonstrated by applying it to the Sandnessjøen Airport, Stokka in Norway, an airport that is located in a mountainous area. The model is able to forecast turbulence in real time and trigger an alert when atmospheric conditions might result in high wind shear and turbulence. **Keywords :** aviation safety, terrain-induced turbulence, atmospheric flow, alert system

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