

Flow Characterization in Complex Terrain for Aviation Safety

Authors : Adil Rasheed, Mandar Tabib

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

Conference Title : ICAT 2016 : International Conference on Aviation and Turbulence

Conference Location : Singapore, Singapore

Conference Dates : January 07-08, 2016