

簡介香港國際機場的低空風切變監測及預警系統

A brief overview of the low level windshear monitoring and alert system in use in Hong Kong International Airport

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摘 要

本文概述了香港國際機場所使用的低空風切變監測和警報系統，以及如何配置該系統來應對不同天氣條件下的風切變。低空風切變監測和警報系統包括數個子系統，利用包括機場多普勒天氣雷達（TDWR）、激光雷達（LIDAR）、陸地和氣象浮標上的風速儀等設備提供風切變警報。每個子系統根據其所擁有的數據對低空風切變進行獨立評估，並發出相應的警報。低空風切變監測和警報系統隨後自動整合這些子系統的警報，提供一個經整合的警報信息。通過與飛行員的風切變報告和飛機上的風速數據進行驗證，我們評估了整個系統以及部分子系統的警報表現。驗證結果還顯示了各個子系統的優缺點，以及它們之間如何相互補足。

關鍵字：低空風切變、整合警報、自動天氣監測、激光雷達

Abstract

This paper gives an overview on the low-level windshear monitoring and alert system in use in the Hong Kong International Airport and how it is configured to tackle the windshear in various weather conditions. The low-level windshear monitoring and alert system composes of a handful of sub-systems that provide windshear alerts from equipment including TDWRs, LIDARs, anemometers on land and on weather buoys. Each of these sub-systems makes their own assessment on the low level windshear and issues alerts based on the data available to them. The low-level windshear monitoring and alert system then automatically integrates alerts from these sub-systems to provide a consensus alert. The performance of the system as a whole and some of its sub-systems are verified against windshear reports from the pilots and wind derived from aircraft on board data. The performance verification also shows the metrics and short-comings of the individual sub-systems and how they complement each other.

Key words : Low Level Windshear, Consensus Alert, Automated Weather Monitoring, LIDAR