Towards Measuring the Impact of Weather Phenomena on Arrival Management

PRU

DECEA

Abstract

**TEASER** With air transportation recovering around the globe, the policy focus shifts back to environmental protection and the climate change impact of air transportation. Arrival operations at airports form part of a substantial benefit pool. **WHY IMPORTANT** Little attention is currently given to the underlying mechanism of changing weather phenomena on arriving air traffic. **APPROACH** This paper presents the conceptual approach to describe arrival management sequencing as a spatio-temporal problem within 200NM around an airport. The success of the trajectory-based operations will be analysed in light of significant weather disruptions at the arrival airports and within the studied arrival horizon. **EXPERIMENT** **MAJOR RESULT/TAKE AWAY**

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|  | This article is work in progress. We also use the Quarto manuscript project type to explore the new features. Please consult these pages regularly to follow any updates. |

## Introduction

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| Table 1: Threshold values for proxies defining particular hazard type.

| Hazard type | Shortcut | Threshold values |
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| Thunderstorm | TSTM | ML CAPE >150 J kg-1, convective precipitation >0.25 mm h-1 |
| Limited visibility | LIMV | Ceiling height <200 ft AGL, low-level cloud cover ¼100% |
| Low-level wind shear | LLWS | 0–100 m AGL vertical wind shear gradient >3 kt per 100 ft |
| Snowfall | SNOW | Snowfall >0.5 mm h 1 (liquid water content equivalent) |

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Source: [Article Notebook](https://euctrl-pru.github.io/paper-2024-wx-impact/index-preview.html)

Values from (Taszarek, Kendzierski, and Pilguj 2020). Add some more text. Where is the article gone?

## Background

## Concept, Methods, and Data

## Results and Discussion

## Conclusion

## References

Taszarek, Mateusz, Sebastian Kendzierski, and Natalia Pilguj. 2020. “Hazardous Weather Affecting European Airports: Climatological Estimates of Situations with Limited Visibility, Thunderstorm, Low-Level Wind Shear and Snowfall from ERA5.” *Weather and Climate Extremes* 28 (June): 100243. <https://doi.org/10.1016/j.wace.2020.100243>.