# Article information:

Air Transportation Infrastructure Robustness Assessment for Proactive Systemic Risk Management | Journal of Management in Engineering | Vol 36, No 4
<https://ascelibrary.org/doi/10.1061/%28ASCE%29ME.1943-5479.0000789>

# Article summary:

1. Robustness is a key attribute of resilience and serves as a predictor of infrastructure system performance under disruptions, informing proactive infrastructure risk management.

2. Previous studies did not consider some key factors that can influence the robustness of air transportation infrastructure networks (ATIN), thus the current study develops a methodology to quantify the robustness of ATIN based on integrating travel time and flight frequency.

3. The developed methodology is applied to evaluate the robustness and associated operating cost losses (OCL) of the Canadian domestic air traffic network under random failures and targeted threats, providing policymakers with means to enable ATIN resilience-guided proactive risk management in the face of natural or anthropogenic hazard realizations.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

作为一篇关于空运输基础设施韧性评估的研究，该文章提供了一些有价值的信息和方法，但也存在一些潜在的偏见和缺陷。

首先，文章没有充分考虑到人为因素对空运输基础设施网络韧性的影响。虽然文章提到了针对有目的威胁的评估，但并没有深入探讨这种情况下的具体影响。此外，在考虑随机故障时，文章也没有涉及可能由人为因素引起的故障。

其次，文章提出了一种新方法来量化空运输基础设施网络韧性，并通过加拿大国内航空交通网络进行了实证分析。然而，该方法是否适用于其他地区或其他类型的基础设施网络仍需进一步验证。

此外，在描述风险管理策略时，文章将其分为预防性和反应性两类。然而，在实践中，这两种策略往往是相互补充、交织在一起的，并不是完全独立的。

最后，在呈现结果时，文章并未平等地呈现双方观点或可能存在的风险。例如，在考虑有目的威胁时，文章只涉及恐怖主义和战争等极端情况，并未考虑更常见、更普遍的安全问题（如黑客攻击、数据泄露等）。

总之，尽管该研究提供了一些有价值的信息和方法来评估空运输基础设施网络韧性，并支持预防性风险管理策略，但仍需要进一步改进和完善。

# Topics for further research:

* Human factors in resilience assessment of air transportation infrastructure
* Applicability of the proposed method to other regions or infrastructure networks
* Complementarity of preventive and reactive risk management strategies
* Equal presentation of different viewpoints and potential risks
* Consideration of common security issues in addition to extreme scenarios
* Need for further improvement and refinement of the study

# Report location:

<https://www.fullpicture.app/item/6dcef4f6a6cd9d3a6df673d68f1e1d4d>