Infrastructure development is critical to safely navigate the Arctic.

Melting sea ice in the Arctic has drawn the attention of international marine transportation. Arctic routes are shorter and can save time and money. However, navigation conditions in the Arctic are highly uncertain due to climate variability and extreme weather. As a result, the increased risk of incidents may limit the expansion of Arctic transit in the near-term. Data-driven probabilistic simulation can assess the risk and impact of Arctic navigation to guide future Arctic maritime infrastructure development.

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