



VISUALIZING GLOBAL WIND PATTERNS (SciVis 2026 - Task 1)

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Problem description/task

Task description from SciVis: Visualize global atmospheric wind patterns using eastward (U) and northward (V) wind velocities to understand atmospheric circulation at different levels.

Dataset - DYAMOND GEOS Data

Problem (pitch): Too dense/monotonous; simplify 3D+time into a few high-impact features and tell a clear story.

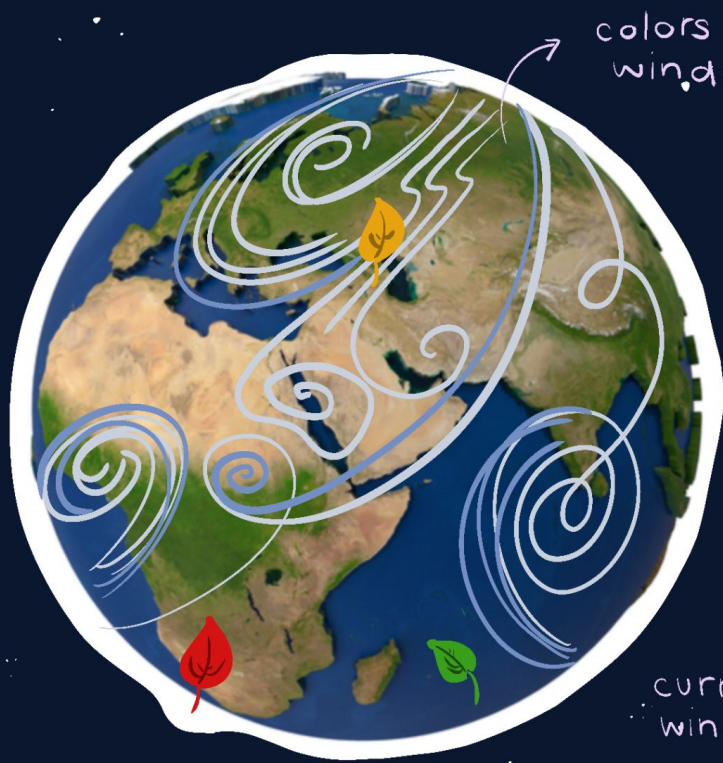
Focus (features): Jet streams (speed ridges), cyclones (\uparrow vorticity), convergence (divergence < 0).

SciVis + Story: Time-varying vector fields, streamlines/particle advection, derived metrics ($|V|$, vorticity, divergence) \rightarrow interactive narrative, not just arrows.



Our Solution

- Core concept: interactive and narrative driven approach
- Generate animated airlines showing large-scale atmospheric patterns and local small-scale patterns
- Follow symbolic objects like a drifting leaf or cow carried by the wind, depends on wind strength (emotional impact)
- Each object maintains a journey log (passport) that records both geospatial regions it overflies and scientific milestones it encounters
- Info panel that shows wind speed/direction, temperature and pressure with clear units.



colors indicate
wind speed



passports with landmark
stamps and scientific
milestones

current
wind data

wind speed : x
altitude : x
temperature : x
pressure : x
...



time



wind speed
scale



References

[What storytelling can do for information visualization | Communications of the ACM](#)

[Storytelling and Visualization: An Extended Survey](#)

<https://sciviscontest2026.github.io/tasks/home#task1>