



Turbulence

Turbulence, often encountered in everyday phenomena like **flowing fluids**, holds a profound level of organization that scientists are still striving to understand.

- Turbulence is a **complex fluid motion characterized by chaotic fluctuations, unpredictable variations**, and the formation of **swirling patterns called vortices**.
- The balance between fluid **inertia (fluid's tendency to keep moving)** and **viscosity (motion-slowing force)** determines whether a flow is **laminar (well-ordered)** or **turbulent (highly unstable)**.
 - **When inertia dominates, turbulence emerges.**
- **Applications of Turbulence:**
 - Meteorological models leverage turbulence studies for **more accurate short-term weather predictions**, essential for disaster preparedness.
 - Studying turbulence helps assess the **dispersion of pollutants** in the atmosphere, influencing **environmental policies**.

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