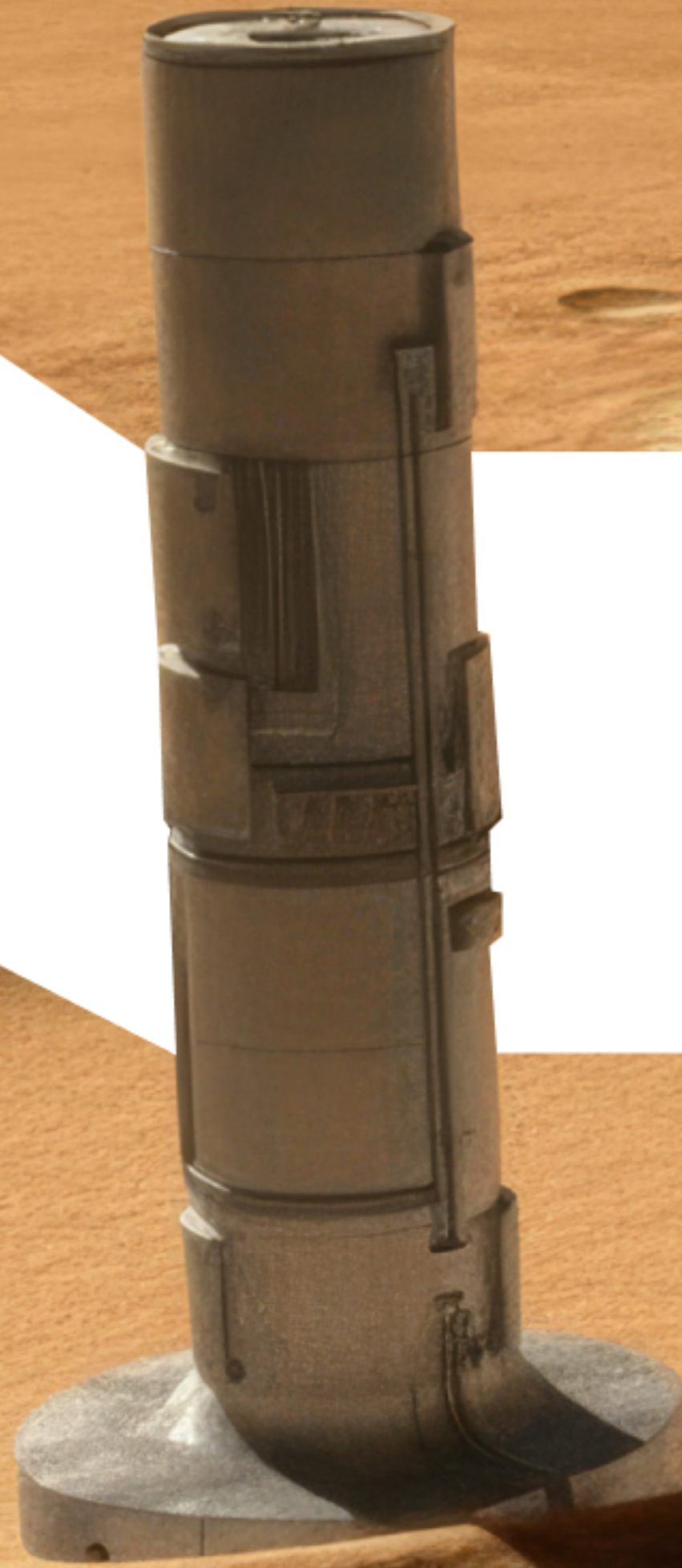


*APPROXIMATE VISUALIZATION

HOW NATURAL AERODYNAMICS IS CHANGING THE INDUSTRY



Problem

Industry needs solutions that combine production and environmental safety.

Our goal

Reducing environmental impact and improving energy efficiency.

Our decision:

Engineering installations utilizing natural aerodynamic processes (ascending swirling flows).

Basic theory

These technologies are based on a gas-dynamic theory that has been confirmed by numerous experiments and verified by artificial intelligence.

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Theory:

The nature of upward swirling flows is mathematically justified: tornadoes arise due to the interaction of heat flows and the Coriolis force.

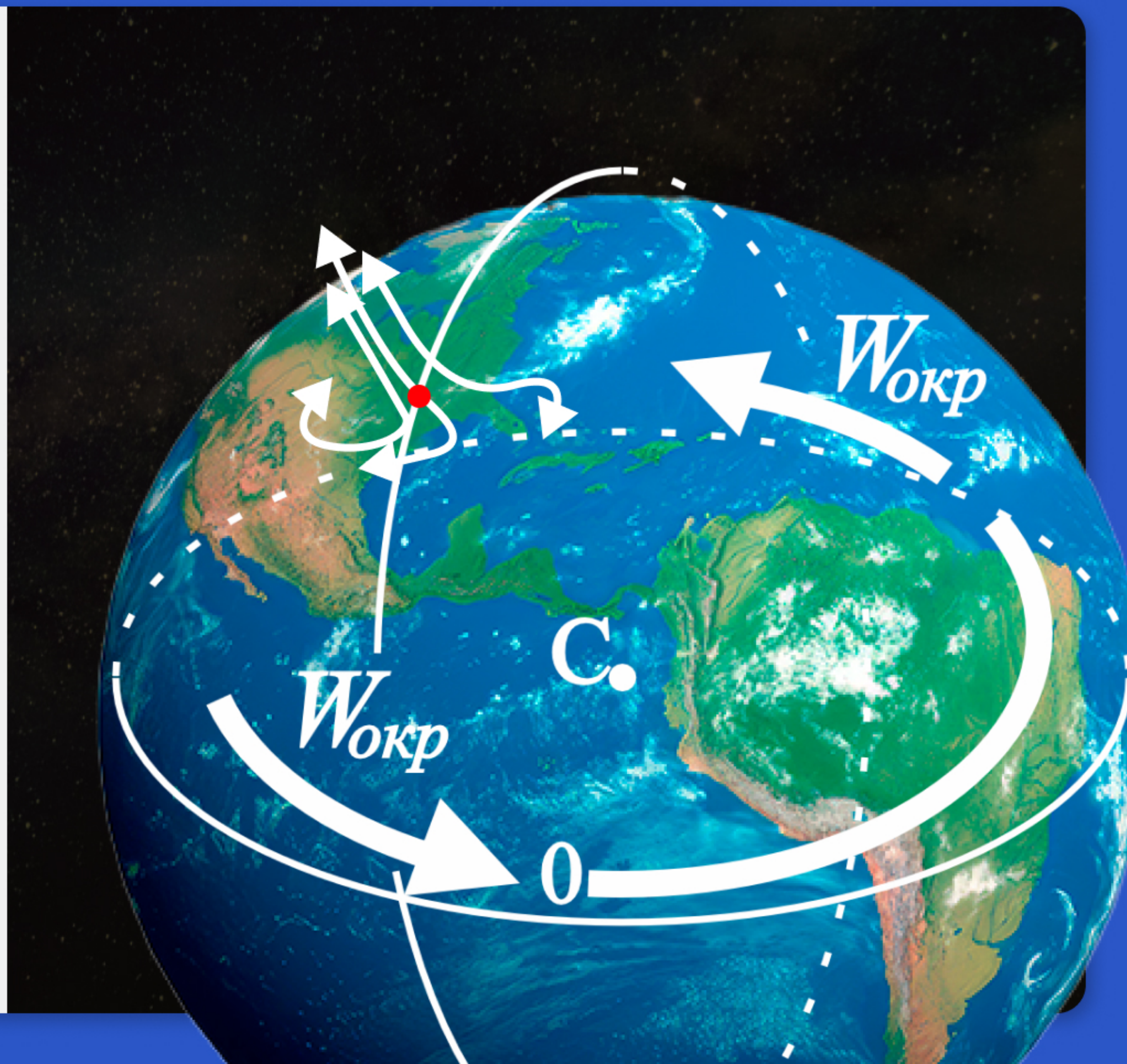
Proven

The swirling of air in whirlwinds is caused solely by the rotation of the Earth. The energy of the planet's rotation is transferred to the flow through inertia (the Coriolis force).

The kinetic energy of air rotation is derived from the kinetic energy of the Earth's rotation around its axis.

Practical conclusions:

The creation of vortex devices capable of generating electricity without the use of hydrocarbon fuels.



Key modeling results:

Stable vortex structure:

Under certain parameters (flow radius r_0 5-10 m, temperature difference), a stable vortex up to 10 meters high is formed.

Optimal zone of maximum energy:

The maximum kinetic energy of the vortex is located in the zone 0.3-0.5 r_0 from the radius of the base of the flow. This is critical for the placement of the generator blades.

Mathematical confirmation of the theory

System of equations of gas dynamics in a coordinate system rotating together with the Earth

$$\left\{ \begin{array}{l} c_t + uc_r + \frac{v}{r}c_\varphi + wc_z + \frac{(\gamma-1)}{2}c \left(u_r + \frac{u}{r} + \frac{v_\varphi}{r} + w_z \right) = 0, \\ u_t + uu_r + \frac{v}{r}u_\varphi - \frac{v^2}{r} + wu_z + \frac{2}{(\gamma-1)}cc_r = av - bw \cos \varphi, \\ v_t + uv_r + \frac{uv}{r} + \frac{v}{r}v_\varphi + wv_z + \frac{2}{(\gamma-1)}\frac{c}{r}c_\varphi = -au + bw \sin \varphi, \\ w_t + uw_r + \frac{v}{r}w_\varphi + ww_z + \frac{2}{(\gamma-1)}cc_z = bu \cos \varphi - bv \sin \varphi - g, \end{array} \right.$$

$$c = \rho^{(\gamma-1)/2}, \quad p = \frac{1}{\gamma}\rho^\gamma, \quad a = 2\Omega \sin \psi, \quad b = 2\Omega \cos \psi, \quad \Omega = |\Omega|$$

The Coriolis acceleration present in the second, third, and fourth equations — in the differential form of the law of conservation of momentum — introduces additional external momentum into the gas flow, including changing the flow velocity and, consequently, changing the kinetic energy of the flow.

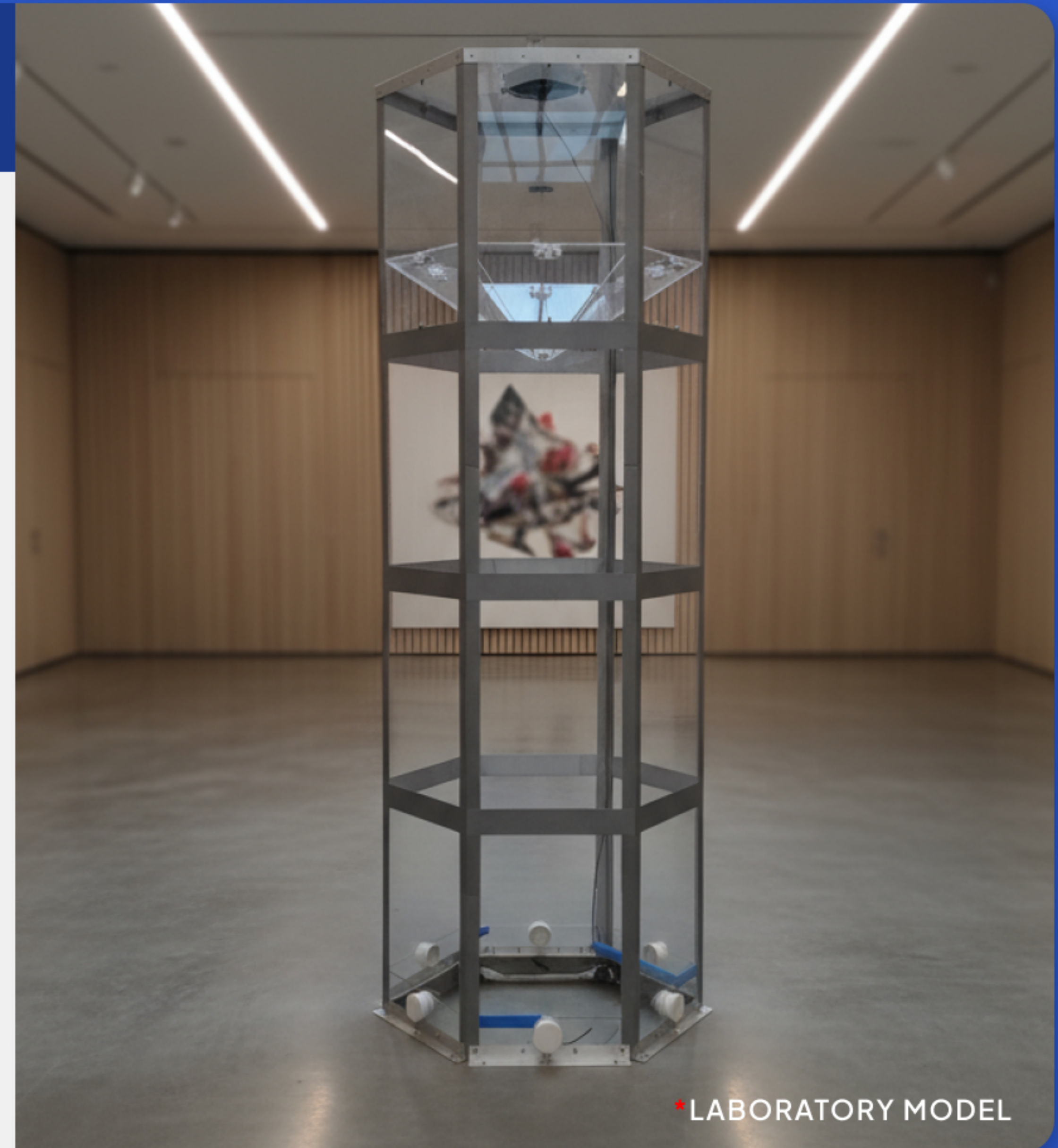
An upward air flow installation has been created in the laboratory in Snezhinsk.

Experiments

A series of experiments proved the possibility of forming stable vortex flows without external forced twisting.

A device has been created in the laboratory in Snezhinsk, inside which an upward air flow is formed. With vertical thrust, spontaneous counterclockwise rotation of the flow is observed (for the Northern Hemisphere), which strictly corresponds to the direction of the Coriolis forces.

The theory has been experimentally confirmed and is ready for practical implementation.



★ LABORATORY MODEL



*PROTOTYPE INSTALLATION

Key advantages of the technology:

Converting waste into energy:

The ability to generate electricity from the waste heat of industrial areas.

Environmental friendliness:

Significant reduction in pollutant emissions (elimination of fuel combustion).

Microclimate:

Reduction of thermal pollution

The kinetic energy of vertical air movement in a cyclone is actually three orders of magnitude less than the total kinetic energy of the cyclone.

Gas-dynamic theory of upward swirling flows —

This is not only an explanation of natural phenomena, but also the basis for a new direction in energy, using the Earth's rotation as a source of motion.

The gas-dynamic theory of upward swirling flows combines fundamental physics and applied energy. Using the Earth's rotation as a natural source of kinetic energy opens the way to new types of green energy.

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