MCP SERVER | NO CODE | CLOUD HOSTED

Board Speed Variance Calculator MCP

Predict speed fluctuations and assess safety in gusty wind.

Board Speed Variance Calculator helps kiteboarders model how wind turbulence affects their speed and control. It uses wind speed, gust factors, and kite size to predict speed variance and determine if your gear is safe for current conditions. You can check environmental stability or see how improving your reaction time might reduce speed spikes.

A+ Quality Score 100/100

kiteboarding | wind | speed | safety | stochastic

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vinkius.com/en/ai-agent-connect/board-speed-variance-calculator

SCAN TO VIEW

The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

Board Speed Variance Calculator MCP

4 tools available
Cloud-hosted on Vinkius

Wind turbulence makes kiteboarding unpredictable. This MCP gives you the math to understand how gusty conditions will actually impact your ride. Instead of guessing if a kite is too small for a sudden gust, you can model the relationship between wind speed, gust factors, and your specific kite size. You can calculate expected speed ranges to see how much your velocity will fluctuate, or use the environmental stability index to judge how choppy the wind feels. It also lets you run simulations to see how much your own reaction time helps mitigate speed spikes. It is a practical way to assess safety and control before you hit the water.

Core Capabilities

01 — Wind Stability Assessment

Your agent uses this to determine how smooth or choppy the wind environment is.

02 — Gear Safety Checks

Your agent checks if a specific kite size is safe for the current wind and gust factors.

03 — Speed Profile Modeling

Your agent calculates statistical speed ranges for specific kite and wind setups.

04 — Skill Impact Simulation

Your agent calculates how much improved reaction times reduce speed spikes.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/en/ai-agent-connect/board-speed-variance-calculator** — connect your AI agent in three steps.

01 Connect your MCP-compatible client to Vinkius.

02 Provide wind speed, gust factor, and kite size to your agent.

03 The agent calls the necessary tools to run calculations.

04 Receive specific speed ranges, safety assessments, or stability indices.

Connect your client to Vinkius and start asking questions about wind and speed.

Built For

Kiteboarders looking for data-driven safety decisions in unpredictable wind.

Kiteboarders

Use the MCP to check if their current kite is safe for upcoming wind conditions.

Wind Analysts

Use the tools to model speed variance and environmental stability.

Safety Instructors

Use simulations to show students how reaction times affect speed spikes.

What Changes When You Connect

01	Predict speed ranges based on kite size and gust factors.
02	Assess kite suitability for specific wind conditions.
03	Quantify how skill improvements reduce speed spikes.
04	Measure wind smoothness using a stability index.

Real-World Applications

Pre-ride Safety Check

Check if your kite size is appropriate for the current wind and gust factor before launching.

Skill Progression Planning

Simulate how moving from beginner to advanced skill levels reduces speed variance.

Wind Condition Analysis

Use the stability index to decide if the wind is too choppy for your current setup.

Speed Modeling

Calculate expected speed profiles for specific wind and kite combinations.

4 Tools Available

#	TOOL	DESCRIPTION
01	`get_environmental_stability_index`	This tool provides a simplified index to show how smooth or choppy the wind environment is.
02	`get_kite_suitability`	This tool determines if a specific kite size is appropriate for your current wind conditions.
03	`get_speed_variance_metrics`	This tool calculates core statistical speed profiles based on your kite and wind setup.
04	`simulate_reaction_impact`	This tool measures how much improving your reaction time can reduce speed spikes during a ride.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U What will my speed range be with a 12m2 kite in 15m/s wind and a gust factor of 1.5 if I am an intermediate rider?

Your expected speed range is between 12.4 m/s and 18.6 m/s, with moderate control difficulty.

U Is a 7m2 kite safe for 25m/s wind with a gust factor of 1.3 for an advanced rider?

Yes, the kite size is suitable for these conditions and the risk level is low.

U How much will my speed variance decrease if I move from beginner to advanced skill?

Moving from beginner to advanced skill will result in a 45% reduction in speed variance.

Frequently Asked Questions

01 **How does this MCP help with kiteboarding safety?**

It allows you to check if a kite size is suitable for specific wind conditions and gust factors to avoid unsafe setups.

02 **Can I use this with Claude or Cursor?**

Yes, you can connect this MCP to any MCP-compatible client like Claude, Cursor, or Windsurf.

03 **What kind of data do I need to provide?**

You typically need to provide wind speed, gust factors, kite size, and your skill level.

04 **Does it account for rider skill?**

Yes, it can simulate how improvements in reaction time from skill progression reduce speed spikes.

05 **What is the environmental stability index?**

It is a simplified index that tells you how smooth or choppy the wind environment is.

06 **How does rider skill affect the results?**

Higher skill levels reduce the impact of gusts by allowing for more effective depower, which lowers the `speedStandardDeviation` and improves control.

07 **Can I use this to choose a kite size?**

Yes, the `get_kite_suitability` tool specifically checks if a kite size is appropriate for your current wind speed and skill level.

08 **What is the stability index?**

The stability index is a value from 0 to 1 provided by `get_environmental_stability_index` that describes how laminar or turbulent the wind is.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"board-speed-variance-calculator": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

Board Speed Variance Calculator is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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DOCUMENT INFORMATION

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Platform	Vinkius Cloud for AI Agents
Endpoint	`https://edge.vinkius.com/{token}/mcp`

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