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ERA5 CLIMATE CRITICAL SUSCEPTIBILITY - CORRECTED

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Dataset: ERA5 Reanalysis
Region: Europe (35-70°N, -10-40°E)
Period: 2015-2024 (10 years)
Data points: 26,195,663

KEY CORRECTION:

Observable = variance of TEMPERATURE GRADIENTS
(not variance of smoothed field itself)

VALIDATION RESULTS:

[PASS] H1 INTERIOR PEAK

$\sigma_c = 54$ km

$p = 0.0000$

[MARG/FAIL] H2 TEMPORAL SCALING

$p = 1.0000$

[PASS] H3 SPATIAL RESOLUTION

[PASS] H4 CROSS VALIDATION

KEY FINDING:

- Critical scale: 54 km
 - 95% CI: [47, 62]
- Peak clarity $\kappa = 83.50$
- Statistical significance $p = 0.0000$
- Physical: Mesoscale (local weather)

Runtime: 22.0 minutes

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