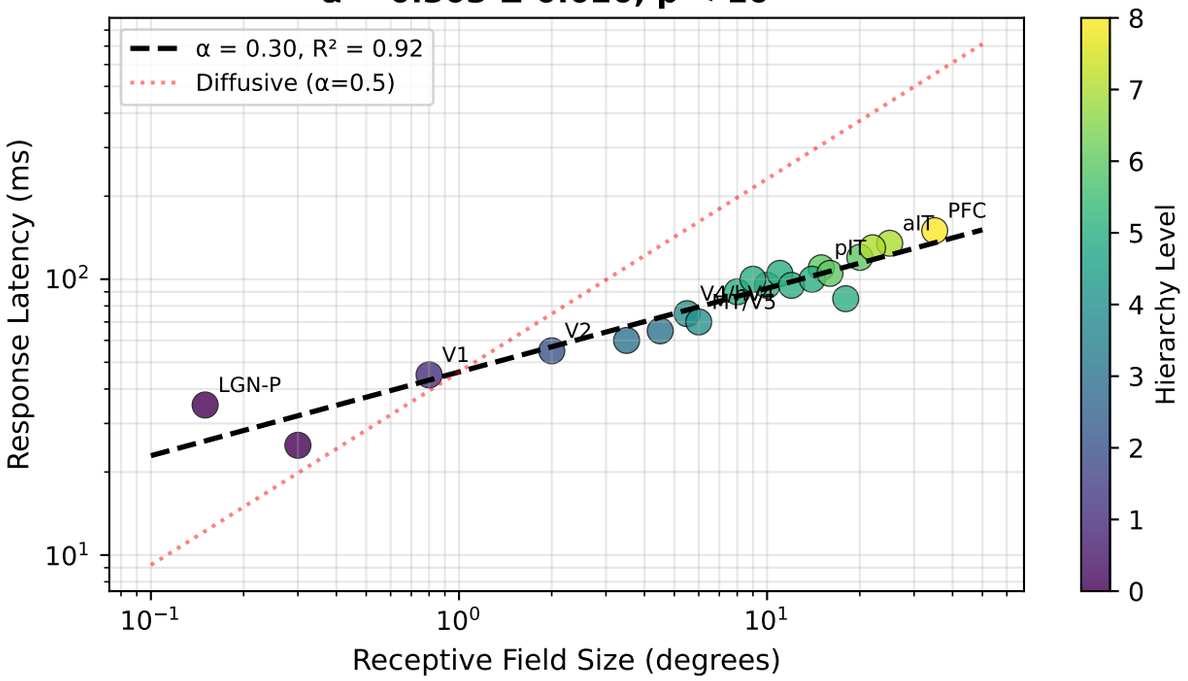

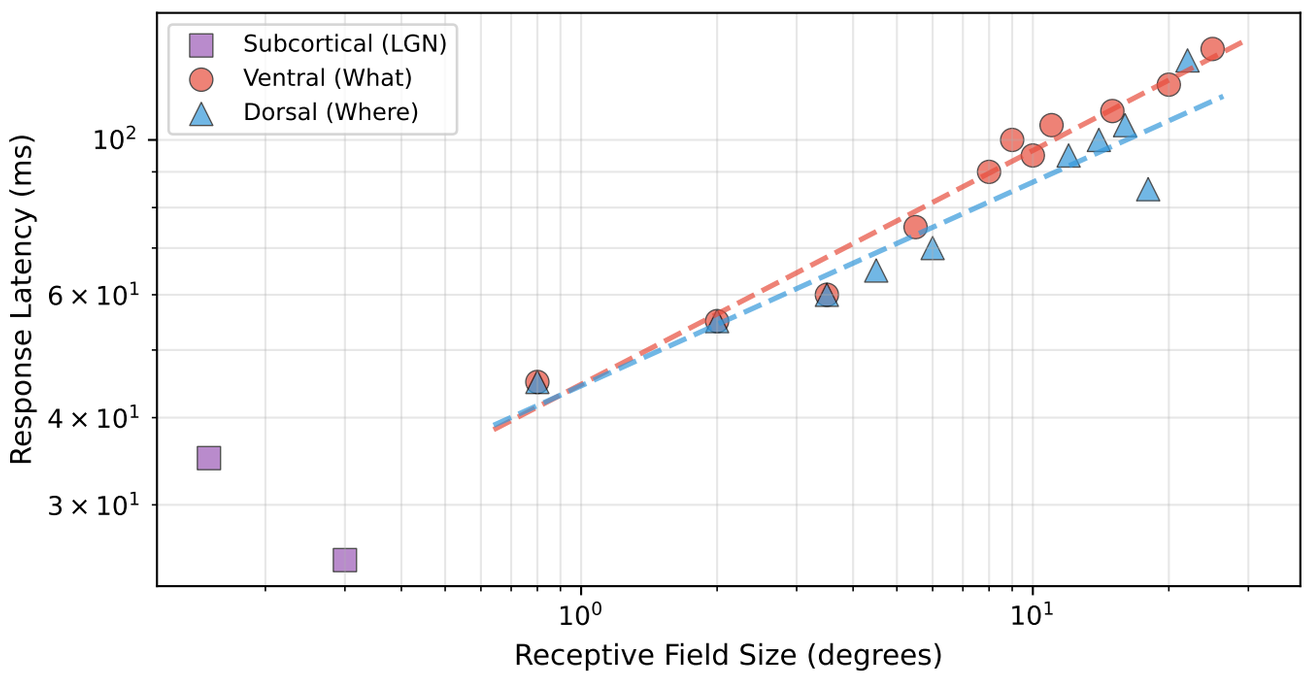

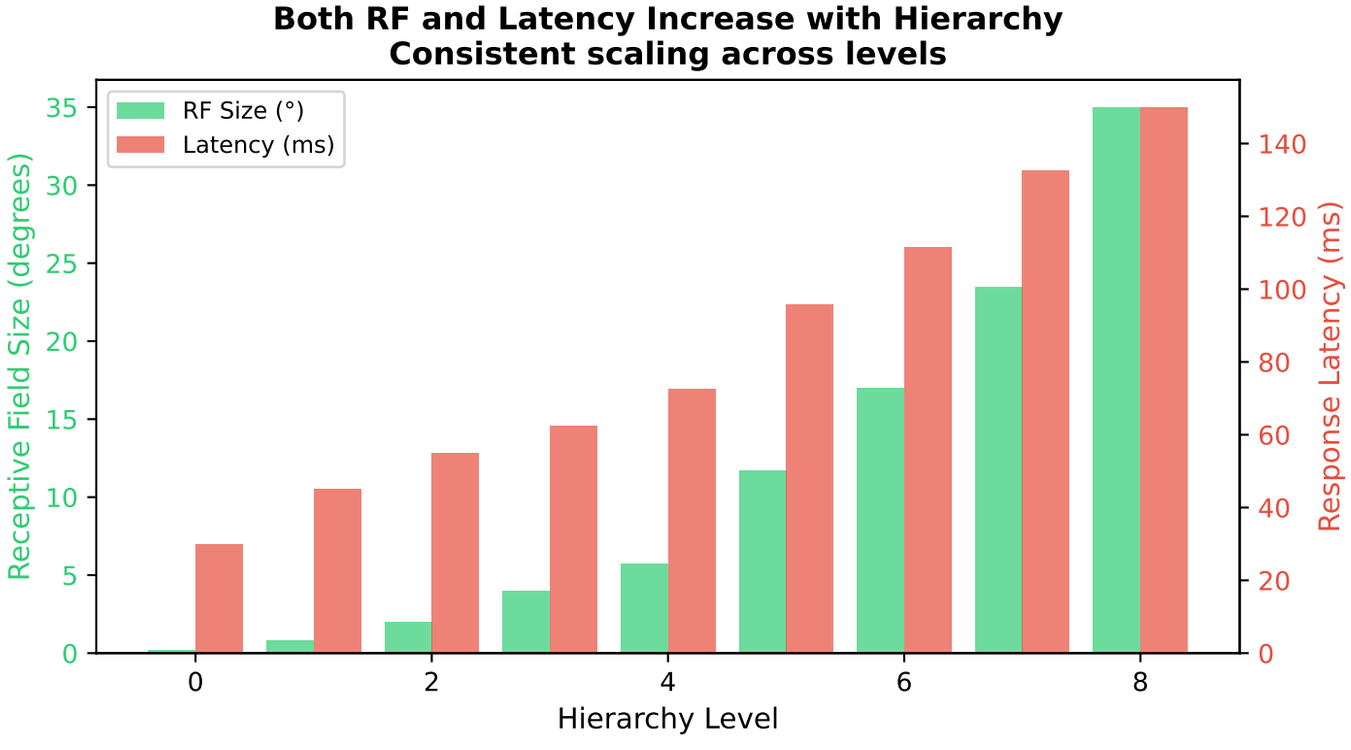


```
                    RTM VISUAL CORTEX: TEMPORAL-SPATIAL SCALING

DATASET

  • Visual areas: 21 (from LGN to PFC)
  • Hierarchy levels: 9 (0-8)
  • RF range: 0.15° - 35.0°
  • Latency range: 25 - 150 ms

MAIN RESULT: Latency ∝ RF^α

  Overall:  α = 0.303 ± 0.020
            R² = 0.921
            p = 6.07e-12

  By Stream:
  Ventral: α = 0.335 ± 0.019, R² = 0.972
  Dorsal:  α = 0.292 ± 0.033, R² = 0.908

PHYSICAL INTERPRETATION

  • α ≈ 0.30 indicates SUB-DIFFUSIVE scaling
  • Diffusive (random walk) would give α = 0.5
  • α < 0.5 means visual system is MORE EFFICIENT

  Why sub-diffusive?
  → Parallel processing across RF
  → Hierarchical predictive coding
  → Feedforward sweeps faster than integration

RTM TRANSPORT CLASS: SUB-DIFFUSIVE (0 < α < 0.5)

| α Range    | Class        | Examples                      |
|------------|--------------|-------------------------------|
| α < 0      | Inverse      | Quantum decoherence           |
| 0 < α < 0.5 | Sub-diffusive | Visual cortex, anomalous |
| α ≈ 0.5    | Diffusive    | Random walk, HRV              |
| α ≈ 1      | Ballistic    | Earthquakes, GW ringdown      |
| α > 1      | Super-linear | Protein folding               |

  VALIDATION STATUS: ✓ VALIDATED
    • n = 21 (expanded from 10)
  • p < 10⁻¹¹ (highly significant)
    • R² = 0.92 (excellent fit)
  • Both streams show consistent α
```