Observational Validation of Segmented Spacetime in G79.29+0.46
Multi-Wavelength Evidence Supporting Temporal Density Framework

All predictions derive from single function: $\gamma_{seg}(r) = 1 - \alpha \exp[-(r/r_c)^2]$ *with* $\alpha = 0.12 \pm 0.03$, $r_c = 1.9$ *pc*

Observable	SSZ Prediction	Observed Value	Agreement	Section
Temporal density	$\gamma_{seg} = 1 - \alpha e^{-(r/r_c)^2}$	$\alpha = 0.12 \pm 0.03$	✓	§5.2 (Eq. 10)
Thermal inversion	$T(r) = T_0 \gamma_{seg}(r)$	500 K → 60 K	✓	§5.1 (Eq. 9)
Momentum excess	$\Delta v / v_0 \simeq \gamma^{-1} - 1$	~ 5 km s^{-1}	✓	§5.3 (Eq. 12)
Radio redshift	$\nu \doteq \nu \gamma_{seg}$	6 cm continuum	✓	§5.4
Core mass	$M = (c^2/G) \int \gamma_{seg} dr$	8.7 ± 1.5 M$_\odot$	✓	§5.5 (Eq. 14)
Molecular stability	$kT < E_{bind}$ in $\gamma < 1$ zones	NH_3, CO detected	✓	§5.4 (Eq. 13)

Data sources: Spitzer/IRAC (IR), IRAM 30m (CO, NH_3), Effelsberg (radio continuum)
Reference: Wrede, Casu & Bingsi (2025) – Segmented Spacetime and the Origin of Molecular Zones