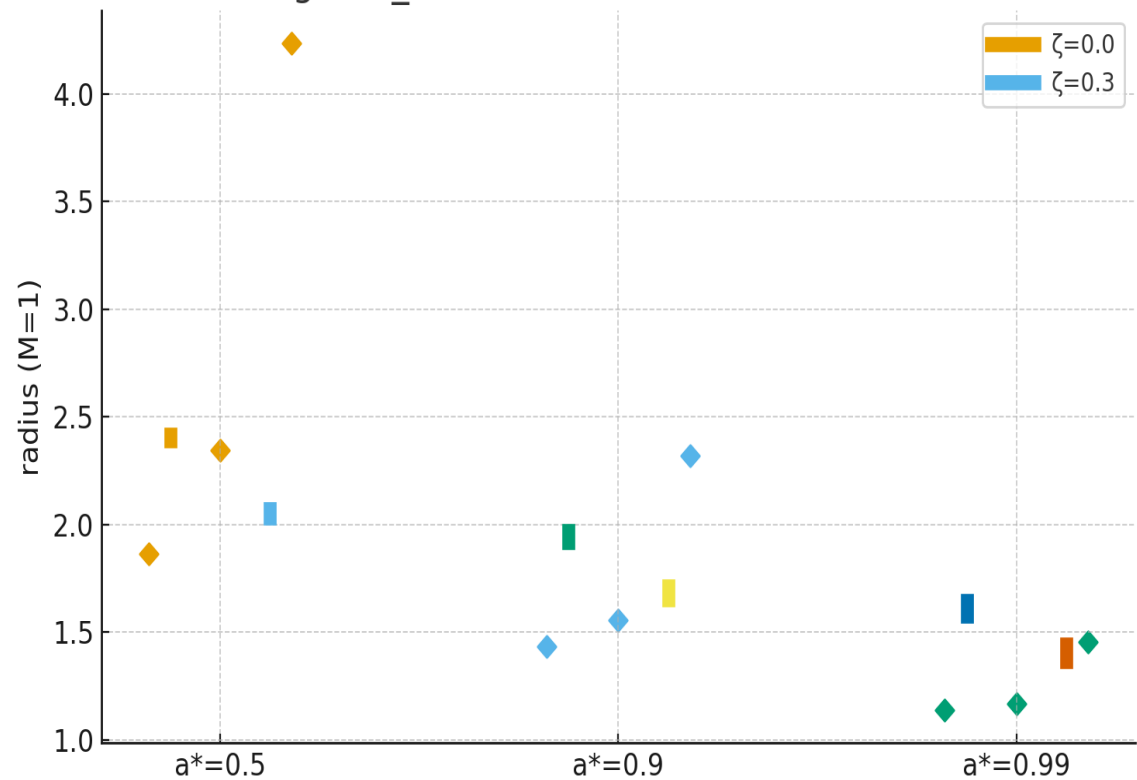


Spin Ladder Prediction: First-Signal Endurance Boundary

Spin ladder: first-signal r_b bands vs release, with horizon/PR/ISCO markers



Takeaway: Across spins, proportional release systematically pulls the first-signal survival boundary inward—toward the photon ring and away from ISCO. This is a falsifiable prediction for GRMHD simulations and astrophysical observations.