Great Oxygenation	Snowball Earth	Cambrian Explosion	Permian Extinction	K-Pg Impact
Complex Loss (log-cosh)	Harsh, Sparse Loss	Smooth, Surjective Loss	Loss Collapse	Non-Smooth Loss
Deep Programs	Robust Solutions	Program Diversity	Global Search	Rugged Programs

Time / Generations

Loss Functions as Evolutionary Epochs: Surjective loss functions act as environmental pressures, shaping program evolution like geological epochs shaped life. Each loss (complex, harsh, smooth, collapsing, or non-smooth) creates a unique fitness landscape, selecting for deep, robust, diverse, or rugged programs. Coevolution of losses and programs drives emergent intelligence, akin to Earth's history of cataclysm and diversification.