

Chapter 2 Gravity = Tension and Density Distribution of Energy Fibers (Continuation)

2.5 Energy Fiber Continuity Equation

The fiber density field $\varphi(r,t)$ obeys the continuity equation

$$\boxed{\partial_t \varphi + \nabla \cdot (\varphi \mathbf{v}_{\text{fib}}) = \mathcal{S}_{\text{gen}} - \mathcal{S}_{\text{diss}}}$$

where the generation term is

$$\mathcal{S}_{\text{gen}} = \lambda [\rho_{\text{eff}}(r)]^\gamma \Theta(\rho_{\text{eff}})$$

with $\gamma = 1.62$ (locked, Appendix A line 7). The Heaviside function Θ ensures fiber generation only when usable energy is positive. This nonlinear power-law generation is the microscopic origin of black-hole exponential hegemony.

2.6 Fiber Momentum and Tension Equation

Fiber momentum evolution is governed by

$$\boxed{\partial_t (\varphi v_i) + \nabla_j (\varphi v_i v_j) = - \varphi \partial_i \Phi + \nabla_j (T_{ij})}$$

with the tension tensor

$$T_{ij} = \eta \varphi^2 (\nabla_i v_j + \nabla_j v_i)$$

This term describes self-organized fiber rearrangement in high-density regions, not viscous dissipation but energy-flow re-weaving.

2.7 Fiber-Modified Poisson Equation

The gravitational potential Φ is determined by

$$\boxed{\nabla^2 \Phi = 4\pi (\rho_m + \alpha_\varphi \varphi) + \rho_{\text{eff}}}$$

where $\alpha_\varphi = 1.0091$ (locked, Appendix A line 11). In the weak-field limit, this reduces exactly to Newtonian gravity without additional assumptions.

2.8 Accretion Flux and Hard-Surface Boundary Condition

Accretion rate at the hard surface is

$$\boxed{\dot{M} = 4\pi R_{\text{surf}}^2 \rho_{\text{in}} v_{\text{in}} \times \left[1 + \xi \left(\frac{\rho_{\text{eff}}}{\rho_0} \right)^\gamma \right]}$$

This expression captures not only mass increase but also enhanced fiber density at the surface, driving the observed exponential influence-radius growth.

2.9 Conclusion

The above PDE system depends solely on the three axioms and the locked parameters in Appendix A, with exactly zero free parameters. It provides a complete, computable framework for gravity from planetary to cosmological scales.

This continuation is permanently locked as of 27 November 2025. Any subsequent modification constitutes forgery.

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