Modern Mathematical Methods in Relativity Theory II

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21. Simplified Einstein field equations. Equations of hydrostatic equilibrium [MTW ch.23]; equilibrium configurations: stable vs. unstable [MTW ch. 24].

22. Hamilton-Jacobi theory and the principle of constructive interference [MTW Box 25.3]. Constructive interference $\Rightarrow$ world lines have a finite length determined by Planck's constant. Derivation of Heisenberg's indeterminacy principle.

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27. Schwarzschild spacetime: dynamics, causal structure near r=2M; Eddington-Finkelstein coordinates [MTW 31.4, Box 31.2]; Kruskal-Szekers coordinates [MTW 31.5].

28. Globally defined coordinate system for Schwarzschild spacetime.

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