

Title: Area-Angular momentum inequality in stable marginally trapped surfaces

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Abstract: We discuss the area-angular momentum inequality $A \geq 8\pi|J|$ and show that it holds for axially symmetric closed outermost stably marginally trapped surfaces. Such surfaces are sections of dynamical trapping horizons, namely hypersurfaces that provide quasi-local models of black hole horizons in otherwise generic Lorentzian manifolds whose Einstein tensor satisfies a dominant energy condition. This inequality represents a particular example of the extension to a Lorentzian setting of tools employed in the discussion of minimal surfaces in a Riemannian context.