

Motivated by the question of how generic inflation is, I study the time-evolution of topological surfaces in an inhomogeneous cosmology with positive cosmological constant Λ . If matter fields satisfy the Weak Energy Condition, non-spherical incompressible surfaces of least area are shown to expand at least exponentially, with rate $d \log A_{\text{min}} / d\lambda \geq 8\pi G_N \Lambda$, under the mean curvature flow parameterized by λ . With reasonable assumptions about the nature of singularities this restricts the topology of black holes: (a) no trapped surface or apparent horizon can be a non-spherical, incompressible surface, and (b) the interior of black holes cannot contain any such surface.