

On the absence of inner horizons for anisotropic black holes

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We establish a general no-inner horizon theorem for a wide class of static anisotropic black holes in Einstein gravity. As an application, we demonstrate that a large variety of black holes which possess homogeneous but anisotropic three-dimensional horizons can not have inner horizons. Our theorem is consistent with some previously known results, implying an underlying mechanism that certain kinds of spatial anisotropy can remove inner horizons. Consequently, anisotropic black holes generically develop spacelike singularities in their interiors, offering new insight into the interplay between anisotropy, strong cosmic censorship, and black hole interior structures.



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