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Generalized thermodynamics inside black holes

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There is persistent and endemic confusion between the true (or future) horizon that an infaller passes when they fall into a black hole, and the illusory (or past) horizon, which is the exponentially redshifted image of the object that collapsed to a black hole long ago. I will use a general relativistically accurate interactive Black Hole Flight Simulator to illustrate the distinction between the true and illusory horizons. I will argue that (it is obvious that): (a) Hawking radiation arises from the illusory horizon, for both inside and outside observers; (b) the entropy of the black hole is a quarter of the area of the illusory horizon, for both inside and outside observers; (c) the illusory horizon is intrinsically nonlocal, and is at the root of the nonlocality (information) paradox; (d) when an infaller reaches the singularity, their states merge with the illusory horizon.