

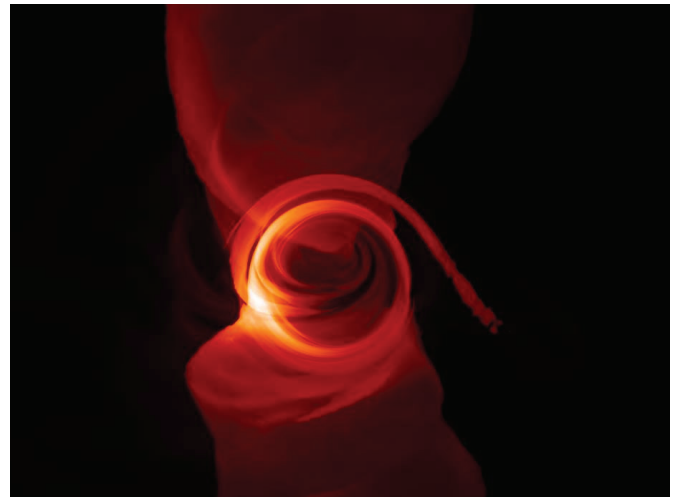
Black hole physics with the Event Horizon Telescope



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Abstract:

The Event Horizon Telescope (EHT) is an experiment that is being performed on a global array of millimeter wavelength telescopes that span the Earth from Hawaii to Chile and from the South Pole to Arizona. With the full array, it is capable of imaging the event horizons of the supermassive black hole at the center of our Galaxy, Sagittarius A*, and the black hole at the center of M87, with an unprecedented $10 \mu\text{as}$ resolution. Its goal is to look for the shadow that is direct evidence for a black hole predicted by the theory of General Relativity and to study the processes by which black holes accrete



matter and grow in mass. I will discuss the multi-pronged efforts that have enabled the full array observations since 2017 and the theoretical developments in simulating the properties of the black hole accretion flows and their expected images using high performance computing. Interpreting the observations within this theoretical framework will open new horizons in black hole astrophysics.