Horizons and Correlation Functions in $2D$ **Schwarzschild-de Sitter Spacetime**[1] PAUL R. ANDERSON, Wake Forest University, JENNIE TRASCHEN, University of Massachusetts, Amherst — It is shown that the two-point correlation function for a massless minimally coupled scalar field in the Unruh state in $2D$ Schwarzschild-de Sitter spacetime grows linearly in terms of a particular time coordinate that is good throughout the spacetime. The rate of growth is equal to the sum of the black hole plus cosmological horizon surface gravities. Similar growth is found to occur for the Unruh state in $2D$ Schwarzschild spacetime and some other $2D$ spacetimes with horizons. There is no such growth for the velocity two-point function, but in many cases a correlation peak is found when the time coordinates for the two points are the same and the space coordinates are separated by one or both horizons

Paul Anderson
Wake Forest Univ

Electronic form version 1.4