

In this talk I investigate how much one can learn about quantum aspects of black holes starting from the semi-classical description of black holes given through the first law of thermodynamics. Focusing on generic extremal black holes and expanding the expression of the first law around these vanishing temperature configurations, we find an equation which can be recast as the expression obtained from Sen's entropy function and/or the Cardy formula for the entropy of a two dimensional conformal field theory (CFT). This makes direct connection with dual CFT proposals accounting for (quantum) microstates of extremal black holes. We extend the first law analysis to the special, but more interesting class of Extremal Vanishing Horizon (EVH) black holes. Expanding the first law expression for near-EVH black holes, we obtain expression of the first law for a BTZ black hole, as expected from the EVH/CFT correspondence.