
JESSICA SANTIAGO, Victoria University of Wellington

Temperature distribution in a rotating universe

In this talk we will review Tolman's relation for temperature gradients in thermal equilibrium states. We will do that by presenting a simplified derivation of this effect, based on the relativistic Euler equation, which will lead naturally to an extension of Tolman-like thermal gradients to the case of stationary spacetimes. We will then explore the thermodynamics of a rotating universe: asking what local thermometers in a rotating disk will measure and what co-moving observers will see. We aim to show how gravity's universality, gravitational redshifts and the observer-dependency of temperature are connected.