



Fig. 3: Temperature (left) and density temperature (right) for adiabatic parcel ascents assuming reversible (black) and pseudoadiabatic (red) thermodynamics and assuming no ice formation. The profiles are plotted as an anomaly from a control ascent that is calculated based on conservation of entropy, assuming no ice formation (an exact solution for the reversible case). Approximate pseudoadiabatic ascent calculated by assuming conservation of pseudo-equivalent potential temperature as defined by Bolton (1980) is shown in blue. Adiabats initialized with $(T, r, p) = (298.15 \text{ K}, 0.02 \text{ kg/kg}, 950.00 \text{ hPa})$