The Relationship (Graphical) between the Environmental Lapse Rate \((ELR)\) and Atmospheric Stability

Note that only the slope of the \(T\) versus \(h\) plot, not the position in the diagram, determines the stability of the described atmospheric layer. If \(h\) is plotted as the ordinate (vertical axis) and \(T\) as the abscissa (horizontal axis) then most atmospheric profiles slope to the left, a right-sloping profile is said to be "inverted." The steeper a left-sloping profile is, the more stable is the atmosphere. Most often the actual tropospheric profile is characterized by a variable slope (as shown in dark pink) and therefore has different degrees of stability at different levels. The realistic atmosphere shown is stable near the surface, conditionally unstable at middle levels and stable at high levels.