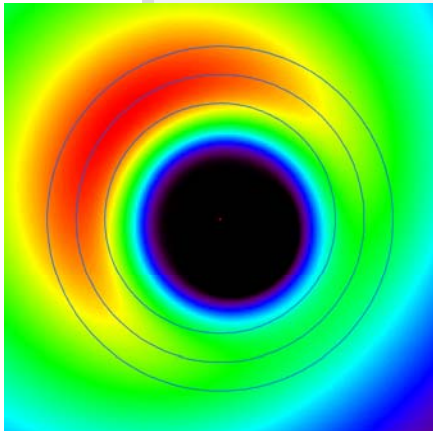


Azimuthal variation in the eyewall's surface-wind may increase maximum potential intensity (MPI)

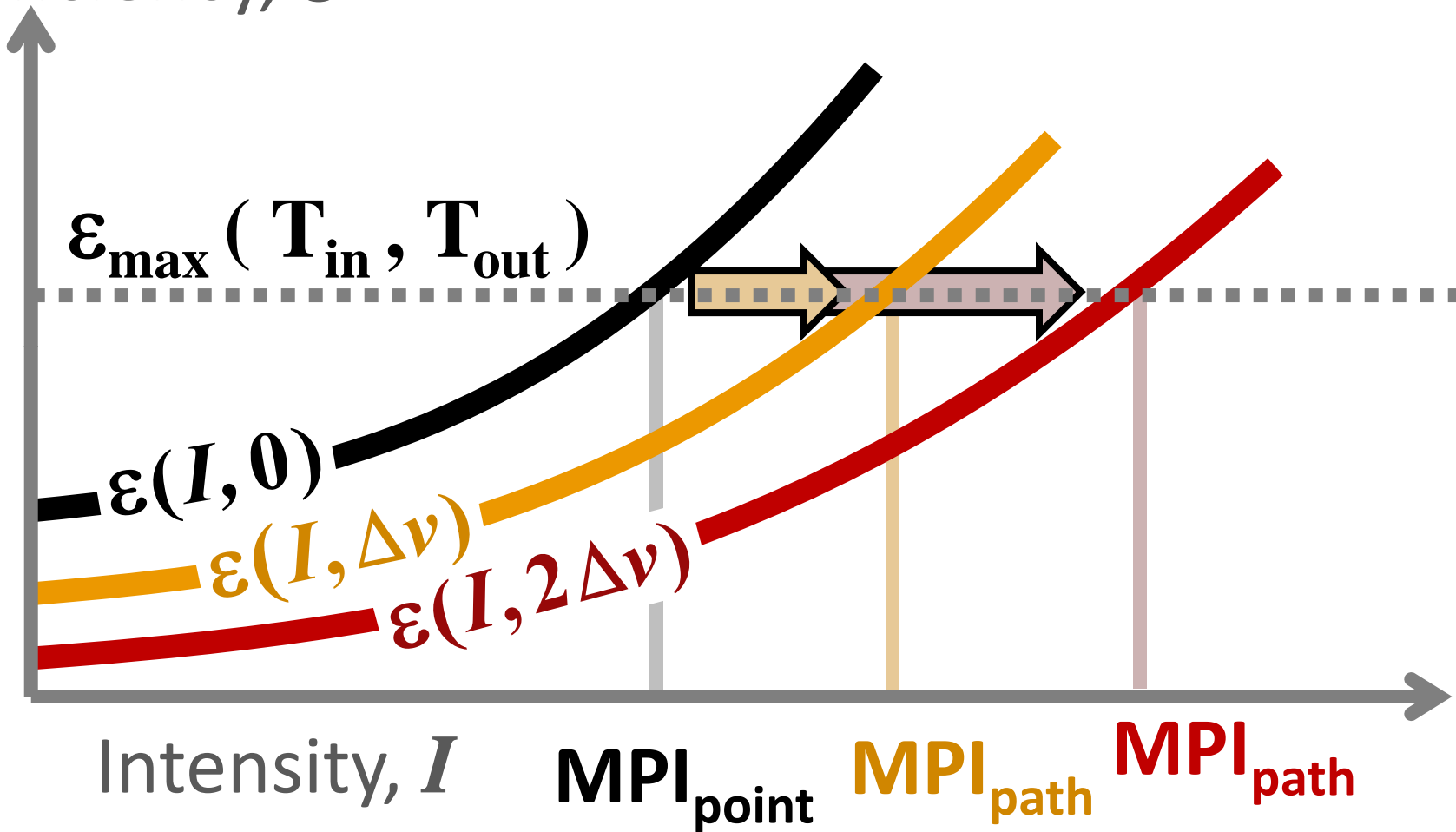
$$\text{Thermodynamic efficiency} = \frac{\int \text{Frictional energy loss } ds}{\int \text{Enthalpy gain } ds}$$

Idealized wind field



Owen Kelley and Daniel Melendez
2013 Interdepartmental Hurricane
Research Forum

Thermodynamic
efficiency, ε



When we calculate MPI, we should to consider the variation in wind speed that occurs around the radius of maximum wind. Otherwise, we considerably underestimate MPI for storms with large asymmetry in their surface wind fields. We all know that most hurricanes are not symmetric, and we need to use this information, integrating frictional loss and enthalpy gain around the radius of maximum wind.