When a star in a binary system evolves off the main sequence, reaching the end of its life, a common envelope between the two stars is formed. The parameter ejection efficiency (a\_eff), defined as the percentage of the orbital energy needed to unbind the common envelope, can be used to predict the final outcome for the system. Typically a\_eff is set as a constant based on observation of the system. However, this can be difficult, as it requires knowledge of the star’s interior. Using numerical models provided by Modules for Experimental Stellar Astrophysics (MESA), we find profiles for the interior of massive stars at their maximum radius. These profiles are used to find the corresponding ejection efficiency, a\_eff.

* Not sure if there’s a conclusion yet
* Tried to keep it less technical for a general audience