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Investigating the Effects of Convective Boundary Mixing on Massive Stars at Low Z

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Massive stars are not well enough understood given the important role their evolution and fates play in Galactic Chemical Evolution (GCE). One key uncertainty is convective boundary mixing (CBM), which encompasses the processes by which materials mix across the edge of convective turbulent regions inside stars. As a result of its effects on stellar structure during evolution, CBM also affects nucleosynthesis and consequently stellar yields. To investigate the importance of CBM we have computed two grids of stellar models at $Z = 10^{-3}$ and two different strengths of CBM using the MESA code. The first being the typical CBM value used in literature and the second is based on the results of 3D convection simulations. In this talk, we will present a comparison of the structure of massive stars both during their evolution and at the end of their lives for these two different strengths of CBM to assess the impact of CBM on stellar evolution, SN progenitors and nucleosynthesis with a particular emphasis on the mergers of different burning shells.

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