B IL1 Mass loss, meridional circulation and turbulence in contemporary stellar evolution models

S. Talon

Département de Physique, Université de Montréal, Montréal, PQ, H3C 3J7, Canada

Rotation plays an important role in determining stellar structure. It modifies surface properties such as temperature and local gravity and might even influence mass loss. Furthermore, it can lead to a significant amount of mixing due to meridional circulation and various hydrodynamical instabilities. The initial angular momentum contained in a star will thus be a third parameter guiding a star's structure and evolution. It is now widely recognized that a complete description of the evolution of angular momentum distribution within the star is required and that rotational mixing is linked to the internal rotation profile.

In this review, I will briefly discuss the hypothesis made in the treatment of rotating stellar models and review the expected efficiency of mixing along the HR diagram. The role of mixing in the localization of abundance anomalies will also be discussed. Finally, I will show how mass loss and gravitational settling of helium drastically influence the evolution of rotating stars, and how A stars can play a unique role in constraining our models.