Hot star winds over evolutionary timescales: Revisions of the mass-loss prescription and impact of magnetic confinement

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Surface phenomena, such as mass loss, angular momentum loss, and magnetism have a large impact on the evolution of hot, massive stars. One-dimensional stellar evolution models rely on parametric prescriptions to account for such surface effects; however, the evaluation, revision, and a change in currently-used prescriptions has become inevitable. First, the impact of mass loss will be discussed and an experimental wind routine will be introduced. This routine is based on the empirical wind-momentum luminosity relation and provides a flexible way to calibrate mass-loss rates in evolutionary models. Second, the implementation of surface magnetic fields in stellar evolution codes will be discussed, particularly focusing on reconciling models with observations. The current challenges and prospects of stellar evolution modeling will be addressed.