COMPLETE STELLAR MODELS: INTERIOR AND SPECTRAL EVOLUTION OF MASSIVE STARS

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We present the first models of massive stars, where the interior structure is coupled to a spherically extended, metal line blanketed non-LTE atmosphere with a wind. This is accomplished with the Geneva stellar evolution code and the non-LTE atmosphere code of de Koter et al. (1993). The method described in Schaerer & Schmutz (1994) is used to treat line blanketing. A first account of this work is published in Schaerer et al. (1994).

The covered evolutionary phases reach from the main sequence to the Wolf-Rayet stages, which can thus be compared to OB, LBV, and WR stars. Since our atmosphere calculations account for the above mentioned effects, our models provide more realistic predictions for hot stars than the widely used plane parallel LTE models of Kurucz.

We predict both line blanketed continuum and H, and He line spectra (C, N, Si in prep.) covering the spectral domain from the EUV to the IR. In particular we also obtain reliable H, He⁰ and He⁺ ionising fluxes.

References

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