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The spectral variations of the O-type runaway supergiant HD 188209

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Abstract

We report spectral time series of the late O-type runaway supergiant HD 188209. Radial velocity variations of photospheric absorption lines with a possible quasi-period of ~6.4 d have been detected in high-resolution echelle spectra. Night-to-night variations in the position and strength of the central emission reversal of the Hα profile occurring over ill-defined time-scales have been observed. The fundamental parameters of the star are derived using state-of-the-art plane-parallel and unified non-LTE model atmospheres, the latter including the mass-loss rate. The derived helium abundance is moderately enhanced with respect to solar, and the stellar masses are lower than those predicted by the evolutionary models. The binary nature of this star is not suggested either from Hipparcos photometry or from radial velocity curves.

Keywords

Line: profiles, Stars: early-type, Stars: fundamental parameters, Stars: individual: HD 188209, Stars: mass-loss, Supergiants