Testing EUV hot stars emission with nebular modelling of IR lines

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As the bulk of radiation in early type stars is emitted in the Lyman continuum and thus inaccessible to direct observations (except in extremely rare cases) it is crucial to find indirect tests to constrain this part of the spectrum, where the essential atmospheric conditions are settled. Nebular observations combined with detailed photoionisation modeling can in principle provide such strongly needed constraints. Here we present the current status of available constraints on the ionising fluxes of O stars and first results from extensive photoionisation model grids using recent non-LTE line blanketed model atmospheres including stellar winds and plane parallel models for O stars (CoStar: Schaerer & de Koter 1997, WMBASIC: Pauldrach et al. 2001, CMFGEN: Hillier & Miller 1998, TLUSTY: Hubeny & Lanz 2001). The method and its dependence on nebular parameters (geometry etc.) are discussed. Our models are compared to a sample of HII regions observed with ISO providing a measure of the ionisation degree through numerous IR fine structure lines.