INSTABILITIES IN HOT-STAR WINDS:
BASIC PHYSICS AND RECENT DEVELOPMENTS

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ABSTRACT The winds of the hot, luminous, OB stars are driven by
the line-scattering of the star's continuum radiation flux. Several kinds
of observational evidence indicate that such winds are highly structured
and variable, and it seems likely that a root cause of this variability is
the strong instability of the line-driving mechanism. This paper reviews
the basic physics of the linear instability and summarizes results from
numerical simulations of its nonlinear evolution. Particular emphasis is
placed on the dynamical importance of the diffuse, scattered radiation
field, and on recent methods for incorporating such scattering effects into
the numerical simulations. I also summarize recent preliminary results on
synthetic UV line, Hα, IR continuum spectra in dynamical wind models
with extensive structure.

This review was very similar to one presented at the recent Kiel workshop on
"Atmospheres of Early Type Stars". The written form will not be duplicated
here, but may be found in Owocki (1991).

Owocki, S. P. 1991, in Proceedings of Kiel Workshop on Atmospheres of Early-