Invited lecture

THE DACs AND SACs EFFECTS FROM STARS TO QUASARS. SOME FIRST GENERAL NOTICES

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The spectra of Hot Emission Stars and AGN present peculiar profiles that result from dynamical processes such as accretion and/or ejection of matter from these objects. In this paper we explain the idea of DACs and SACs phenomena, as a reason of spectral lines peculiarity in Hot Emission Stars and AGN. We present the line function of a kinematical model enabling us to study the physical parameters of the density regions in the plasma surrounding of the studied objects, where DACs and SACs of a spectral line are created, producing the observed peculiar profiles. Using this model, we study some AGN spectral lines and we present an analysis of the physical parameters of the regions that these spectral lines arise from. We also present some first general conclusions, derived from the proposed model, including the relations among the physical parameters of the density regions of the plasma surrounding the Oe stars, where DACs and SACs are created, producing the observed peculiar profiles. Finally we present a first comparison of DACs and SACs phenomena between Be and Oe stars.

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PROFILES IN NOVAE SPECTRA

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The old novae RR Telescopii shows emission lines due to Bowen fluorescence in OIII and NIII. To explain the presence of the many lines arising from this mechanism that have now been observed it is necessary to understand the role of line broadening in the pumping lines produced by multiple scatterings and creating huge optical depths in these lines. This novae provides a clear demonstration of these principles because all the necessary ingredients are present.