

THE MULTICOMPONENT NATURE OF $\text{Ly}\alpha$, N V, Si IV, C IV BALS OF J131912.39+534720.5

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In this paper we report the discovery of a Broad Absorption Line (BAL) Quasar whose $\text{Ly}\alpha$, N V, Si IV and C IV BALs consist of the same number of components. Utilizing two epoch spectra of J131912.39+534720.5, from the Sloan Digital Sky Survey (SDSS), we perform multicomponent fits to $\text{Ly}\alpha$, N V, Si IV and C IV BALs and BELs forming P-Cygni profiles. We analyze each BAL trough to nine doublets. Our model and the fitting criteria we impose during the fitting process guarantee that the number of doublets, each BAL trough is analyzed into, as well as the calculated physical parameters (radial velocities, optical depths, FWHMs) are uniquely determined. By resolving the high ionization BAL troughs into multiple components we study individually each absorbing system in the line of sight and probe its variability in a time interval of ten years. Finally, we investigate the correlation between BAL and BEL variability. Our results suggest that $\text{Ly}\alpha$, N V, Si IV and C IV BALs arise from the same clumpy gas clouds having similar locations, kinematic structure and physical conditions, indicating that quasar winds are far from being smooth and homogeneous. Finally, our findings suggest that variations exhibited by individual absorption components are due to changes in the ionization state of the outflowing gas.