

# Ly $\alpha$ Line Profiles and Polarization in Starbursting Galaxies

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Adopting a Monte Carlo method, we have calculated the Ly  $\alpha$  line transfer in extremely thick, static, and neutral envelopes of starbursting galaxies whose HI column densities lie in the range of  $N_{HI} = 10^{19-22} \text{ cm}^{-2}$ , corresponding to the Ly  $\alpha$  line center optical depth of  $\tau_o = 10^{6-9}$ . We calculate the profiles and polarization of the Ly  $\alpha$  emission lines from evolving superbubbles. The emergent profiles are characterized by double peaks and an U-shaped absorption trough near the line center. As wing scatterings dominantly affect the line transfer, significant polarization develops in a slab-like scattering medium and the polarization direction flips from the electric vector parallel direction to the slab normal to the perpendicular direction as  $\tau_o$  increases. A brief discussion on the observational feasibility is presented.