$$\tau_{\rm H} = 10^{5}$$
 $v_{\rm out} = 50~{\rm km~s^{-1}}$
 3.14
 $N_{\rm out} = 50~{\rm km~s^{-1}}$
 3.08
 $N_{\rm out} = 50~{\rm km~s^{-1}}$
 $N_{\rm out} = 50~{\rm km~s^{-1}}$