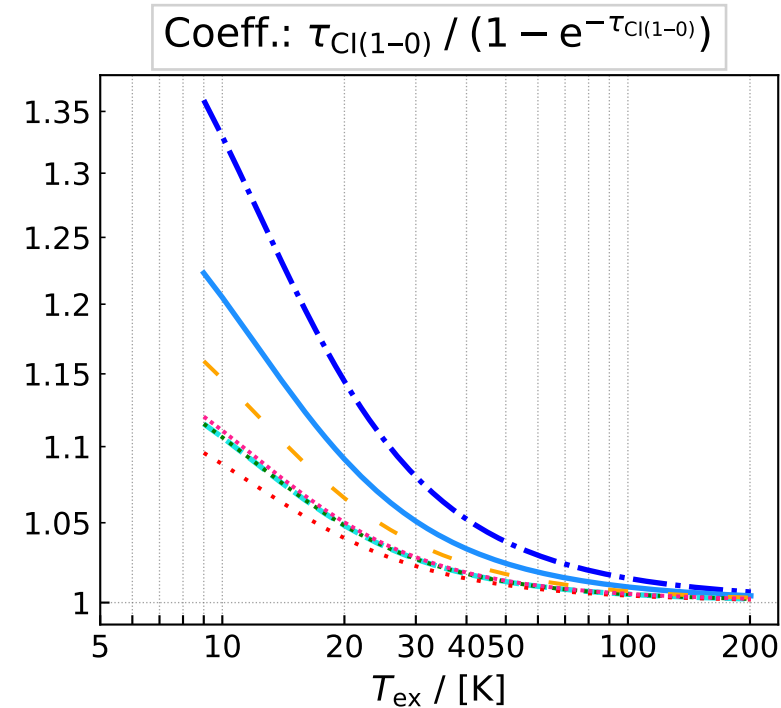
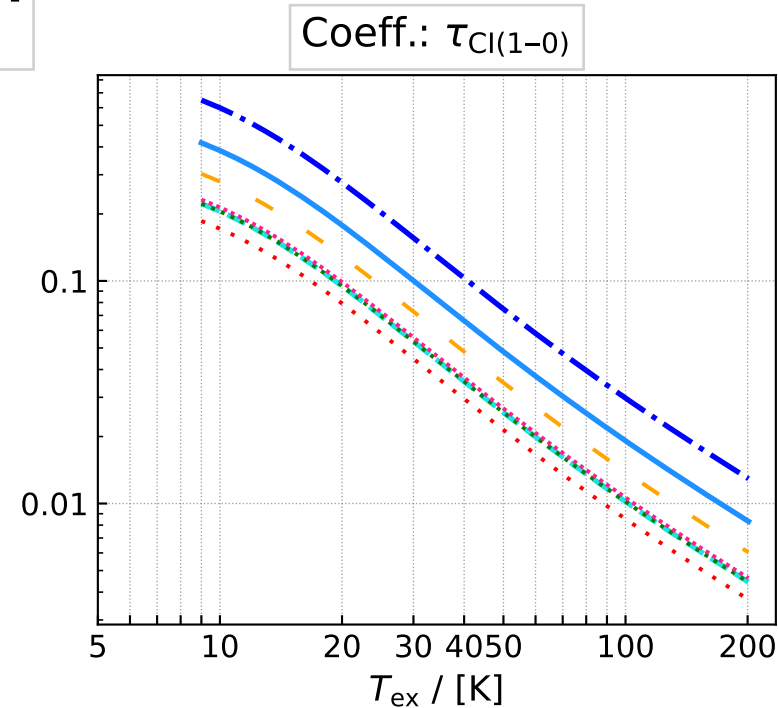
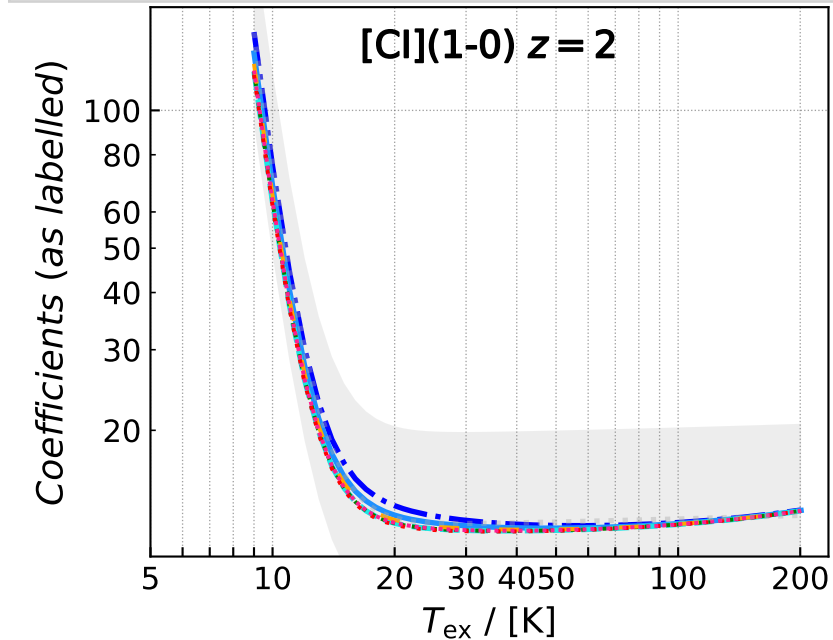


$$\text{LTE } \alpha_{\text{CI}(1-0)}^{\neg\text{He}} = C \cdot [QE] \cdot [\tau] \cdot 10^{-4} / ([\text{C}_\text{I}/\text{H}_2])$$

$$\approx [(0.00 + (T_{\text{ex}}/75)^{7.36}) \cdot (T_{\text{ex}}/75)^{-7.07} + 11.72] \times (2 \times 10^{-5} / [\text{C}_\text{I}/\text{H}_2])$$



- $N_{\text{CI}}=1.3\text{e}17, \Sigma_{\text{mol}}=140, \Delta\nu=3$
 $N_{\text{CI}}/\Delta\nu = 4.3\text{e}16$
- $N_{\text{CI}}=2.8\text{e}17, \Sigma_{\text{mol}}=300, \Delta\nu=10$
 $N_{\text{CI}}/\Delta\nu = 2.8\text{e}16$
- - - $N_{\text{CI}}=3.7\text{e}17, \Sigma_{\text{mol}}=400, \Delta\nu=25$
 $N_{\text{CI}}/\Delta\nu = 1.5\text{e}16$
- $N_{\text{CI}}=7.3\text{e}17, \Sigma_{\text{mol}}=800, \Delta\nu=50$
 $N_{\text{CI}}/\Delta\nu = 1.5\text{e}16$
- $N_{\text{CI}}=8.0\text{e}17, \Sigma_{\text{mol}}=871, \Delta\nu=40$
 $N_{\text{CI}}/\Delta\nu = 2.0\text{e}16$
- $N_{\text{CI}}=8.6\text{e}17, \Sigma_{\text{mol}}=935, \Delta\nu=70$
 $N_{\text{CI}}/\Delta\nu = 1.2\text{e}16$
- $N_{\text{CI}}=1.4\text{e}18, \Sigma_{\text{mol}}=1500, \Delta\nu=90$
 $N_{\text{CI}}/\Delta\nu = 1.5\text{e}16$