

Chamaeleon optically thick HI paper

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Fig1: Gas maps of the Chamaeleon region: WHI (top left); WCO (top right); tau353 (bottom left); dust temperature (bottom right)

Fig2: HI latitude-velocity map of the Chamaeleon region

Fig3: tau353-WHI relationship sorted by dust temperature

Fig4: tau353 vs. dust temperature of the Chamaeleon region

Fig5: tau353 vs. WHI for the local ISM ($|b| > 15\text{deg}$) (left); zoom up for area of the low tau353 (WHI) (right)

Fig6: tau353-based NH models for the power-law index $\alpha = 1.0$ (top left), 1.4 (top right) and 1.6 (bottom left)

Fig7: Gamma-ray flux spectrum of each component: $\alpha = 1.0$ (left); $\alpha = 1.4$ (right)

Fig8: Data/model ratio maps obtained by the gamma-ray analysis: $\alpha = 1.0$ (top left), 1.4 (top right) and 1.6 (middle left) when the isotropic component is fixed; $\alpha = 1.0$ (middle right), 1.4 (bottom left) and 1.6 (bottom right) when the isotropic component is free.

Fig9: Comparison of $\ln L$ among the different α with the isotropic component fixed or free

Fig10: Gamma-ray data count map (top left), model count map (top right) and model count map of the gas component (bottom left) for the energy range from 250 MeV to 100 GeV

Fig11: Comparison of $\ln L$ among the different IC models when the isotropic component is free (left) and fixed (right)

Fig12: tau353-WHI relationship of the Chamaeleon region: model curves for the $\alpha = 1.0, 1.4$ and 1.6 (left) and Cases 1-3 (right) for $\alpha = 1.4$ are overlaid.

Fig13: WCO vs. NH ($\alpha = 1.4$) of the Chamaeleon region for Cases 1 (left) and 2 (right)

Fig14: au353-WHI relationship of the Chamaeleon region: model curves for several values of tauHI (left) and spin temperatures (right) for the NH model with $\alpha = 1.4$ are overlaid.

Fig15: Histograms of tauHI (top left) spin temperature (top right) and NH (bottom left) for the NH model with $\alpha = 1.4$

Fig16: Gas distribution of the Chamaeleon region for Cases 1 (left) and 2 (right).

Fig17: Comparison of the tauHIxVHI vs NHI/NHIthin between the tau353-based NH model with $\alpha = 1.4$ (black points) and HI emission-absorption measurements (red points)

Fig18: Comparison of gamma-ray emissivity spectra among the several studies of local ISM

FigA1: NHthin maps sorted by dust temperature: < 18 K (top left); 18-19 K (top right); 19-20 K (bottom left); > 20 K (bottom right).

FigA2: Gamma-ray emissivity spectra obtained by the NHthin maps sorted by dust temperature

FigB3: ^{13}CO J=1-0 map for the Chamaeleon region (left) and its relation with the tau353-based NH model (right)

FigC4: A histogram for the delta VHI of the Chamaeleon region