Massive molecular filaments in the Galactic plane

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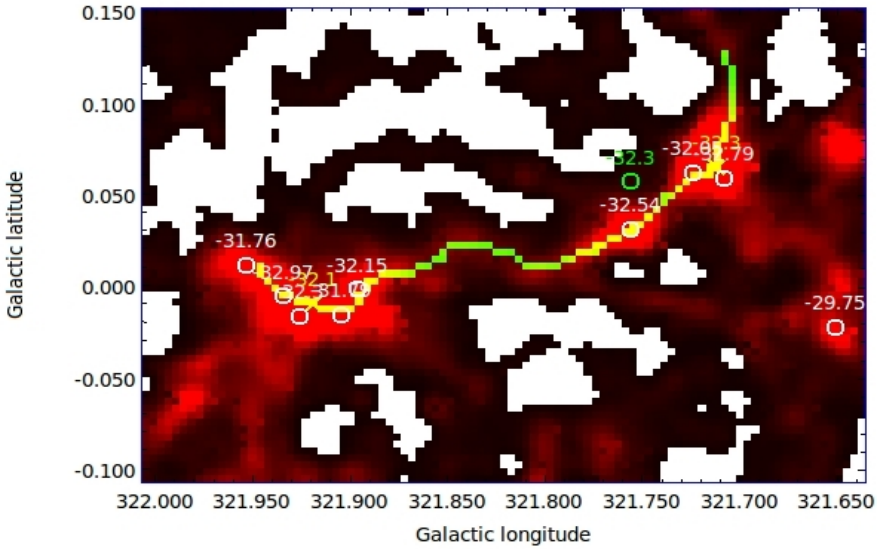
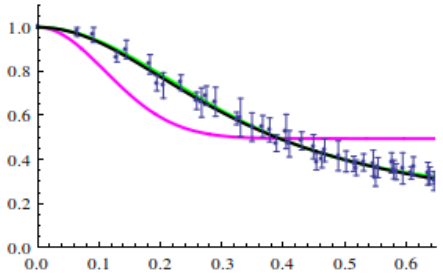
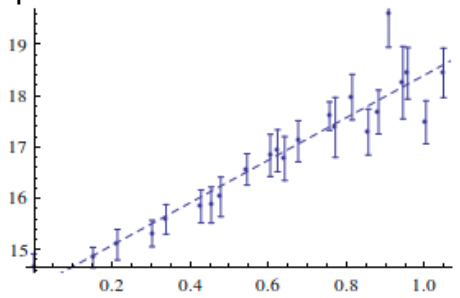
Example: G321.82+0.02, D=2.2 kpc



Norm. col. density



Temperature



Distance to filament spine (pc)

- Dust column density and temperature from Herschel far-IR.
- Filament tracing using *Disperse*.
- Confirmation of physical coherence using several catalogs (RMS, HOPS, MALT90, ATLASGAL, BOLOCAM)
- 114 filaments between longitudes -20° and +60°.
- Mass ~ 10^4 M⊙, Length ~ 16 pc, Width ~ 1 pc, Lineal mass ~ 500 M⊙/pc.
- Weak prevalence of filaments elongated along the Galactic plane.
- Central temperature ~ 15 K, increasing toward the border to values comparable to diffuse ISM ($\gtrsim$ 18 K).