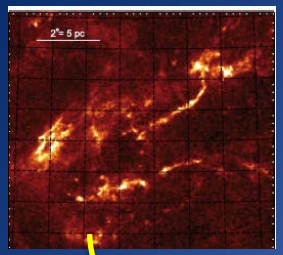
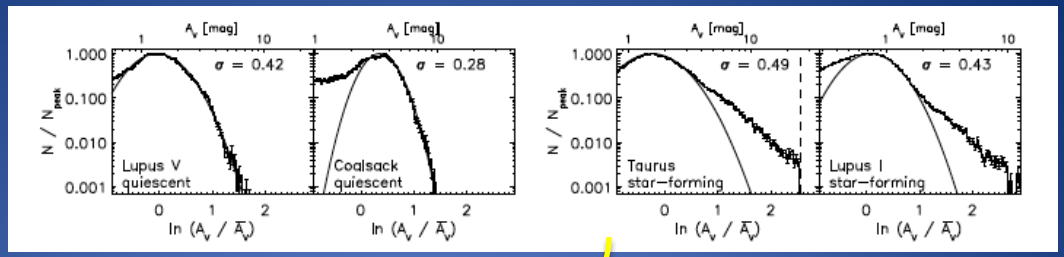
Filament density from pdf inversion

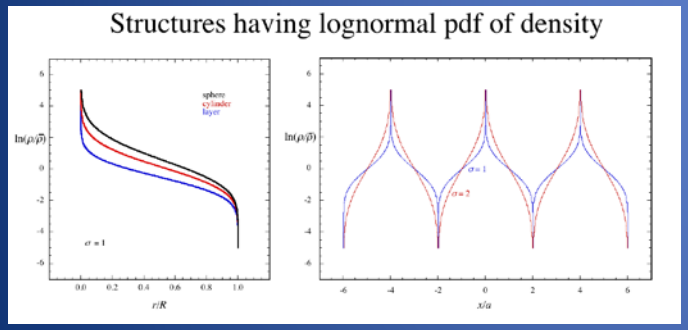


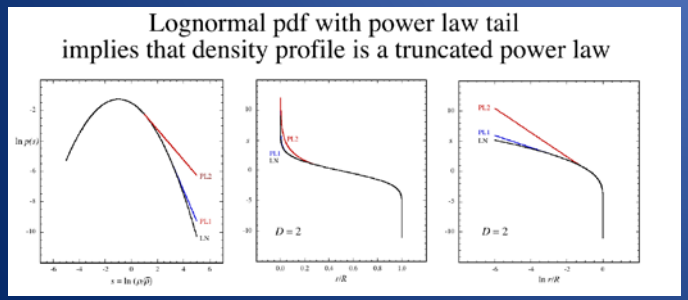


How are cloud structure and pdfs related?

Kainulainen et al. 2009

monotonic density structure & probability invariance:
invert LN, LNPL pdf to get density profile
in spherical, cylindrical, or planar symmetry





column density profile with beam smoothing and
background resembles typical observed filament profile
for cylindrical symmetry (rods) or planar symmetry (ribbons)