

Some considerations...

Possible collaboration #1: clumps and SNRs

SNR-clump interaction

- do clumps survive inside SNRs? (check literature, Klein et al. ...)
- is the B-field amplified? how much? which is its power spectrum? (check Inoue et al. ...)
- do CRs penetrate into clumps? (if RXJ1713 is hadronic CRs with energy **<1 TeV** do NOT penetrate)
- can we use a CR-fluid approach in simulations?

Maybe yes! for $E^{-2.2}$ spectrum CRs with $E < 1$ TeV carry **~80% of the total CR pressure**...

—— > signatures of clump-shock interaction? (Halpa, IR, ...)

Possible collaboration#2:anisotropic diffusion

Cosmic rays in RAMSES

- time evolution of CR bubble: dynamical role of the pressure gradient
- energy dependent diffusion — > several bins
- morphology of gamma ray emission
- mirroring of CRs

Possible collaboration #3: molecular clouds

Streaming instability versus ballistic motion

- Marco's talk — > ballistic ~OK with observations)
- Giovanni's talk — > streaming instability
- impossible to combine the two approaches
- solution 1: parametric fit to giovanni's results
- solution 2: toy model for streaming instability (tested against giovanni's results)

expectations on ionization inside clouds might change significantly

thank you!

