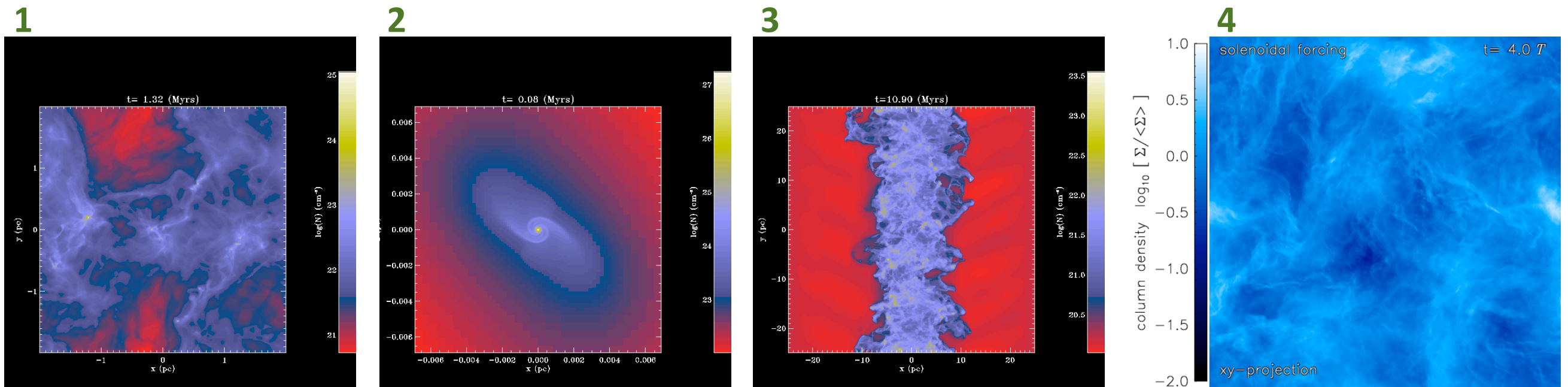


	PROJECT	DESCRIPTION
1	Molecular cloud evolution with decaying turbulence	This project aims at describing the evolution of a turbulent molecular cloud in which the turbulence is decaying.
2	Barotropic dense core simulations	This project aims at describing the gravitational collapse of magnetized molecular dense cores.
3	Colliding flow simulations	This project aims at describing self-consistently the formation of molecular clouds starting from the very diffuse atomic interstellar medium.
4	Solenoidal vs. Compressive Turbulence Forcing	This project investigates the influence of different forcing (i.e., kinetic energy injection) on turbulent flows in the interstellar medium.

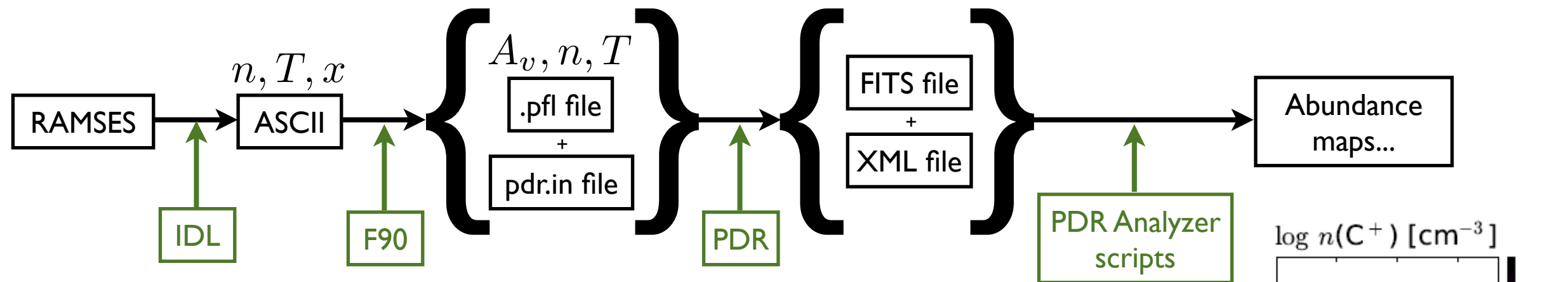


Also in [starformat-dev.obspm.fr](http://starformat-dev.obspm.fr) :

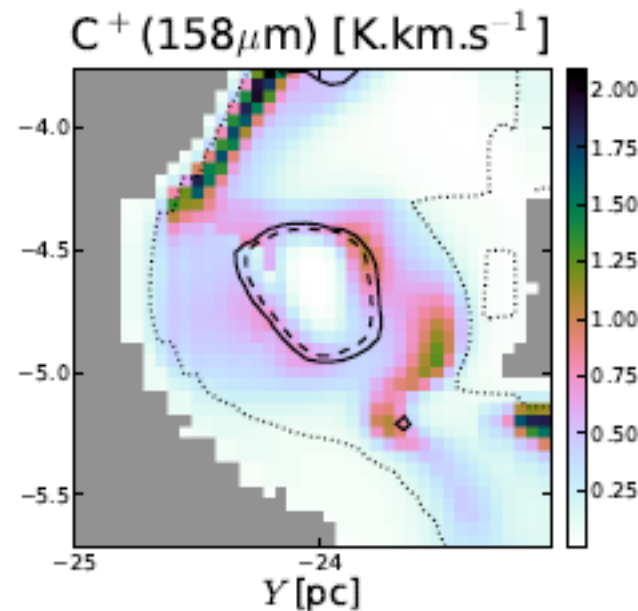
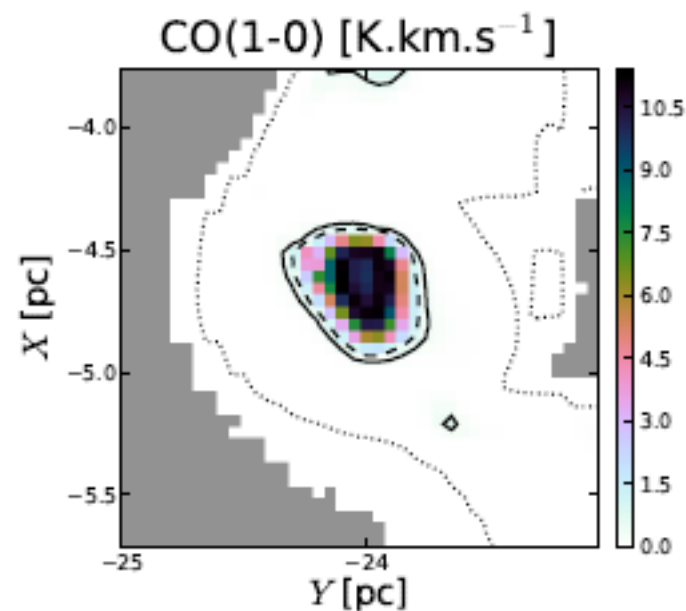
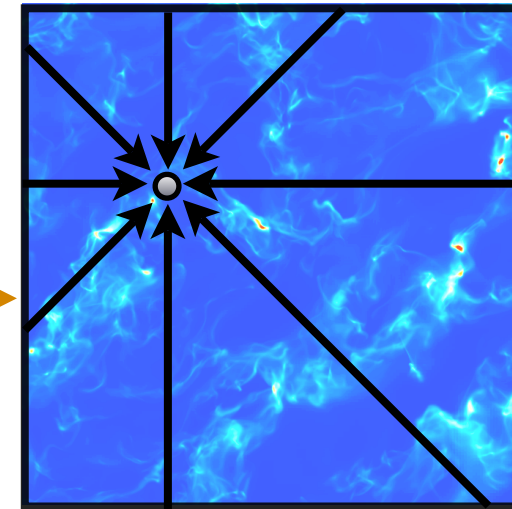
Chemistry simulations	Time-dependent chemistry in a 20 pc box, with driven turbulence and magnetic fields
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- Easy access to simulation results
- Precomputed statistics of “clumps” to allow comparison with observational data
- On-the-fly slicing, projection, and clump extraction (Binary, ASCII, FITS, HDF5)
- Post-processed radiative transfer with RADMC-3D

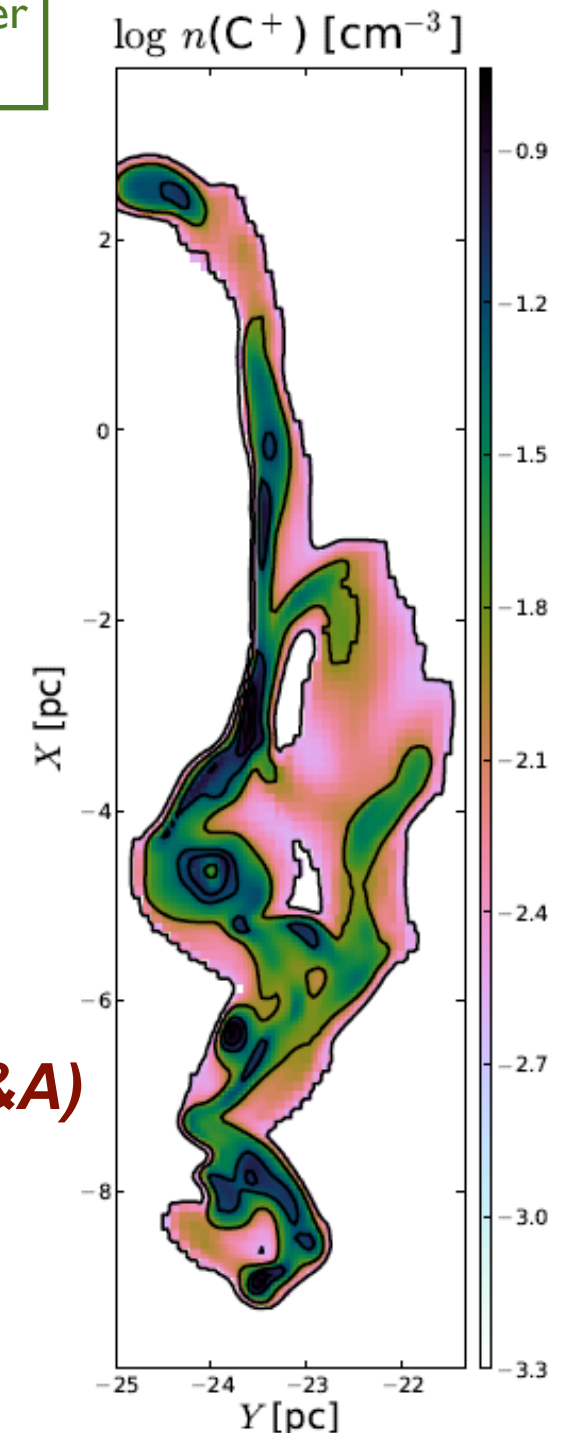
# RAMSES to PDR code



- Profile extraction within MHD simulation cubes
- PDR code runs on multiple lines-of-sight (EGEE grid)
- Post-processing to combine PDR code results
- Building of observables such as line emission maps
- Predictions for future facilities (SPICA/SAFARI)

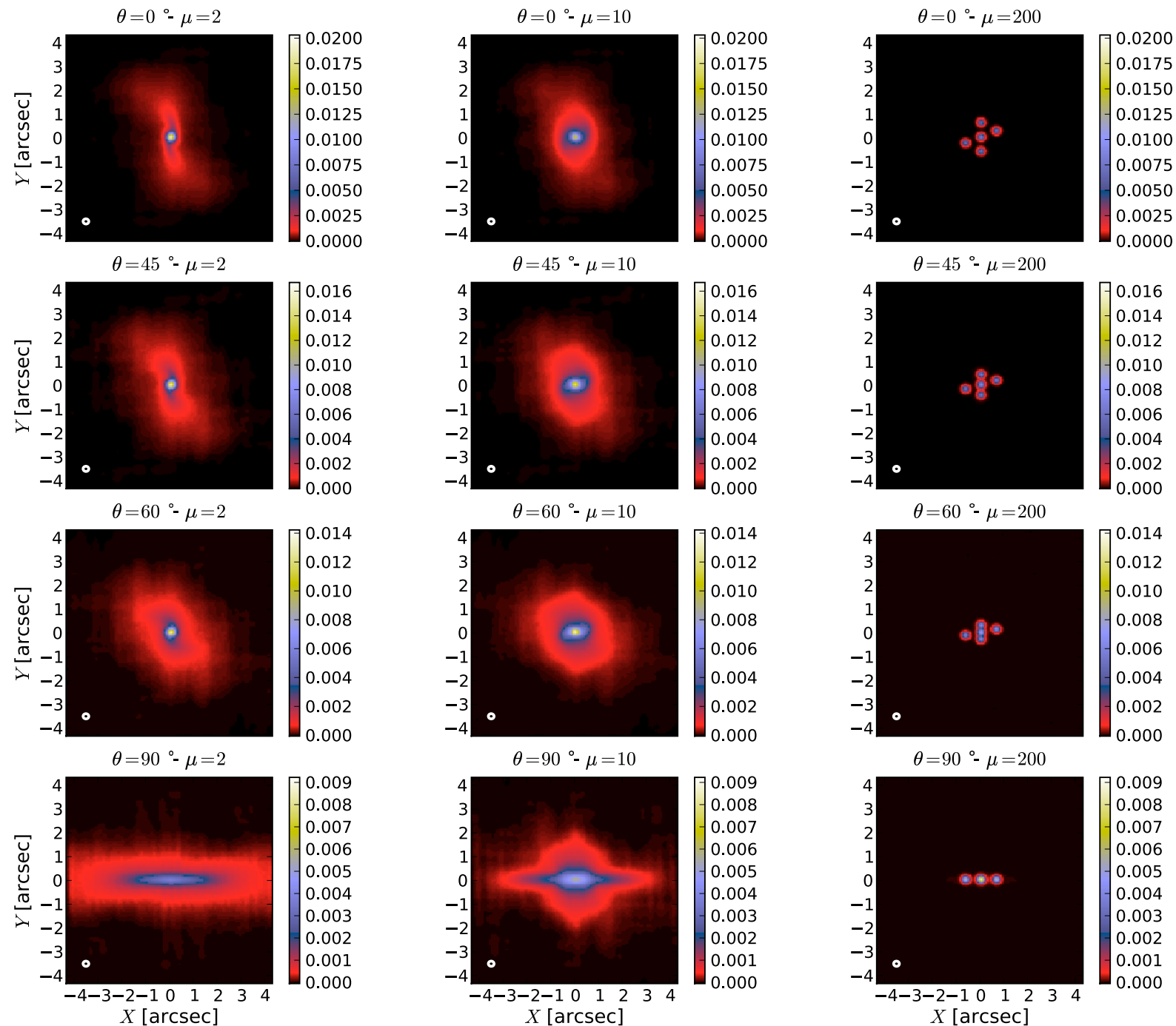


**Levrier et al.**  
(submitted to A&A)



# RAMSES to RADMC-3D to ALMA simulator

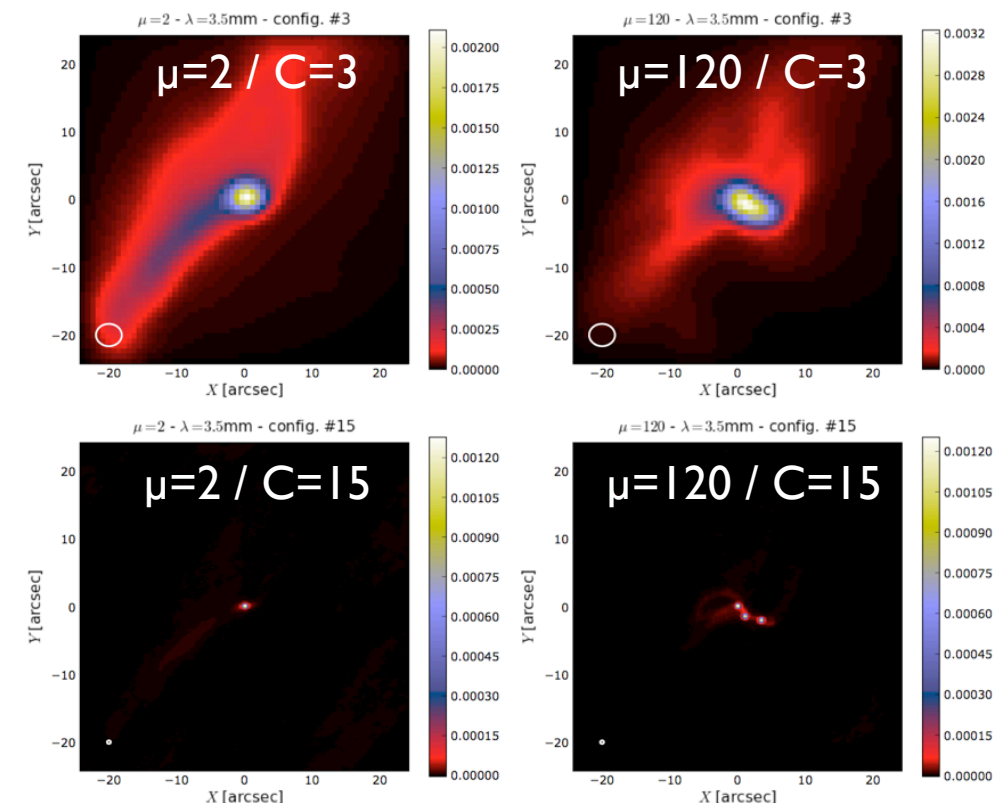
- RAMSES to RADMC-3D already in-place in STARFORMAT (Commercon)
- Manual handling of conversion from RADMC-3D to GILDAS ALMA simulator
- Building of dust emission maps for protostellar cores for different models / configurations / bands



$$\mu = \frac{(M/\Phi)}{(M/\Phi)_{\text{crit}}}$$

**Commercon & Levrier (in prep)**

Also simulations for high-mass-star formation



... and working on line simulations ...

# Conclusions and perspectives

## An evolving database...

- A leading, long-ranging effort to bring together theoretical, numerical and observational expertise in ISM and star formation questions
- Already allows user-friendly access to several numerical simulation results,
- The need for new simulations / statistics / post-processing is an evolving process, motivated by discussions with observers and increasing computing capabilities

## Open for questions...

- Maintenance and development (e.g. clean-up of the RAMSES/RADMC, RAMSES/PDR and RAMSES/GILDAS connections) : manpower ?
- Storage / Traffic issues : available statistics ?
- Open up the database to outside groups ?
- Inverse problems : data mining ?