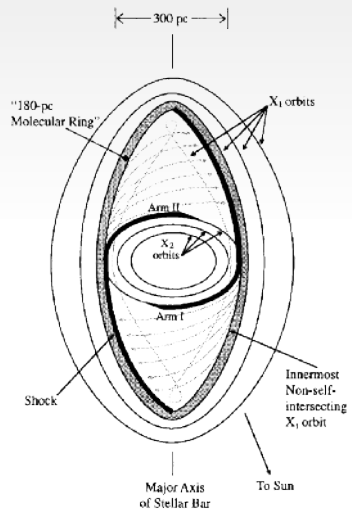




Motivation:

- Observational evidence of AGN activity in the Galactic Center (GC) several millions years ago.
- Unusual star formation in the GC.
- The existence of massive and young stars in the Central cluster



Large amounts of gas can be supplied to the central region of the Galaxy from the Central Molecular Zone (CMZ), a ring-like structure of ~ 180 pc radius and $\sim 10^7 M_{\odot}$. Possible Explanation: infall of a Satellite galaxy, which perturbs otherwise stable gas in the CMZ, driving the gas to inner regions over short timescales (Lang et al. 2013). Estimated $10^5 M_{\odot}$ infall in 10 Myr.

We model the collision of a satellite with the CMZ in the rotating bar potential from Zhao et al. 1994, using hydrodynamical Gadget-2 simulations.

Periodic gas orbits were obtained through shooting technique.

Our fiducial model consists in $\sim 300,000$ isothermal gas particles with total mass of $10^7 M_{\odot}$ and $T=1000K$ for the CMZ and a satellite mass of $2 \times 10^6 M_{\odot}$. Besides the fiducial simulation, we are testing different temperatures, gas and satellite masses, and orbits.

Simulations show and Inflow of $10^5 M_{\odot}$ around 60 Myr after satellite collision. Only a small fraction of the gas ($\sim 10^3 M_{\odot}$) reaches the inner 80 pc around 60 Myr, and a completely negligible amount reaches the interesting scales (10-30 pc). This is comparable to natural instabilities. The perturbation does not seem sufficient to produce neither star clusters at 30 pc, nor star formation at even inner regions.

