Clumpy infall and the Core/Cusp problem

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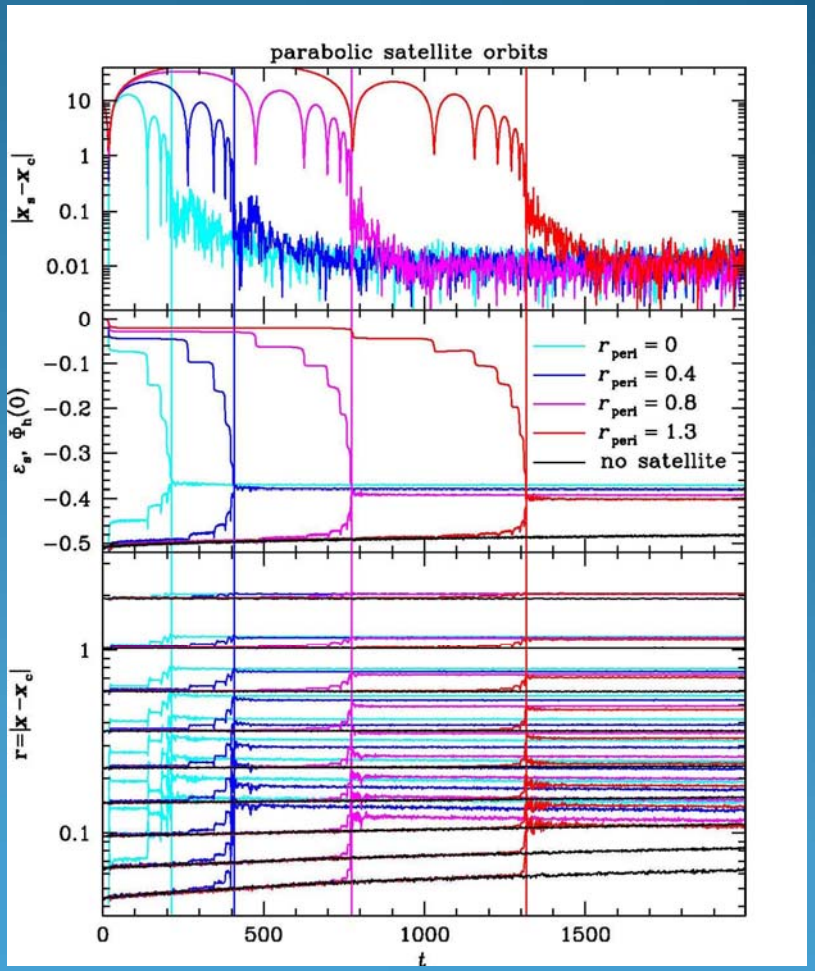
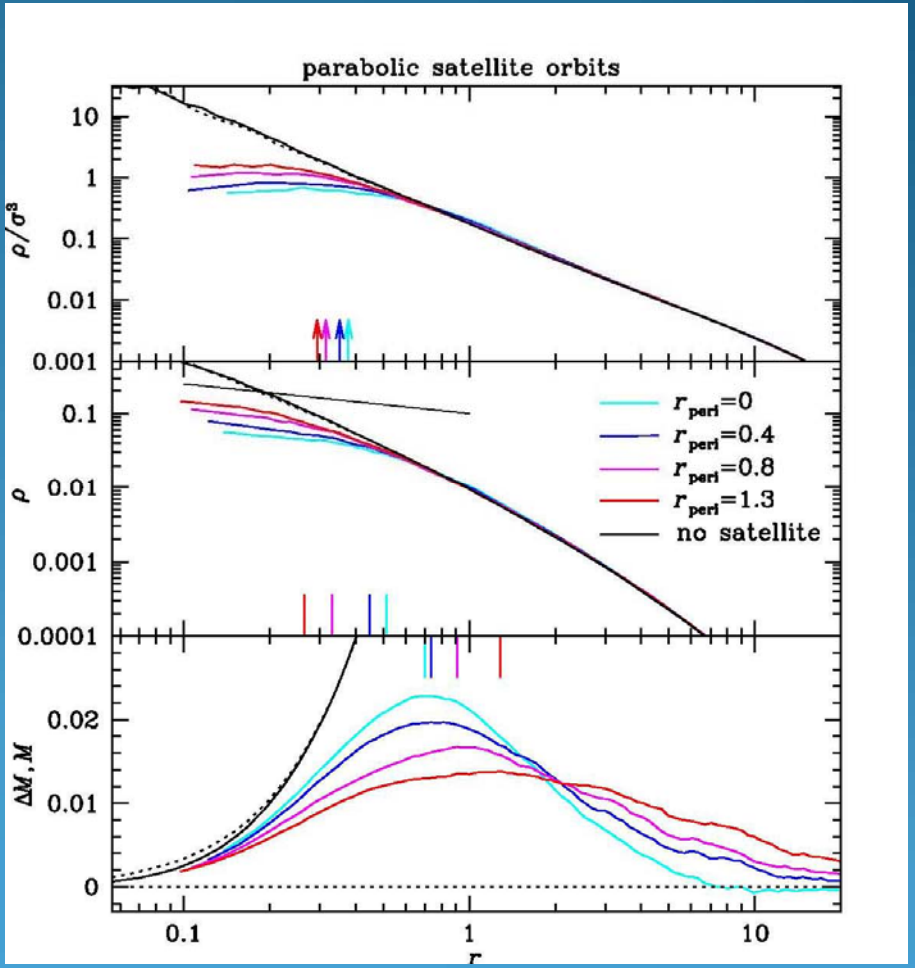
Satellite orbits

Time evolution of the orbits of satellites representing baryonic clumps for four parabolic satellite orbits decaying in a dark matter halo with isotropic velocity distribution.



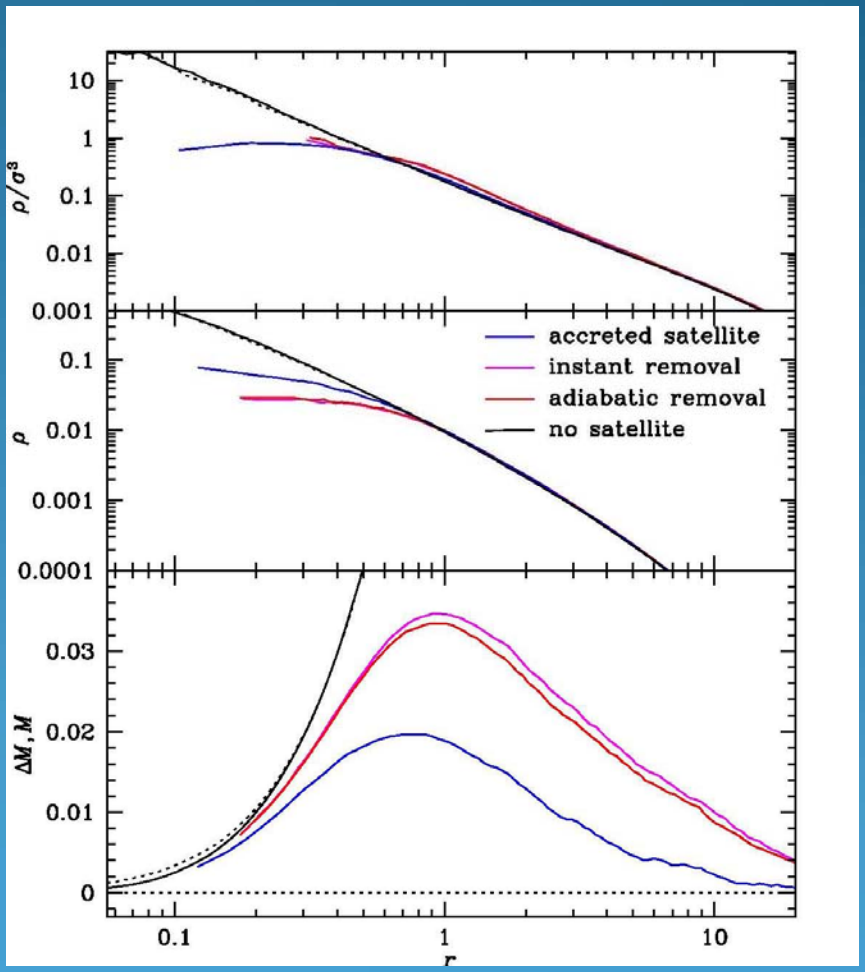
Effect on Dark Matter Halo

Radial profiles of the halo's pseudo phase-space density ρ/σ^3 (top), density ρ (middle), and the change in cumulative halo mass ΔM (bottom) at the end of the simulations shown in the previous slide (colour coding the same).



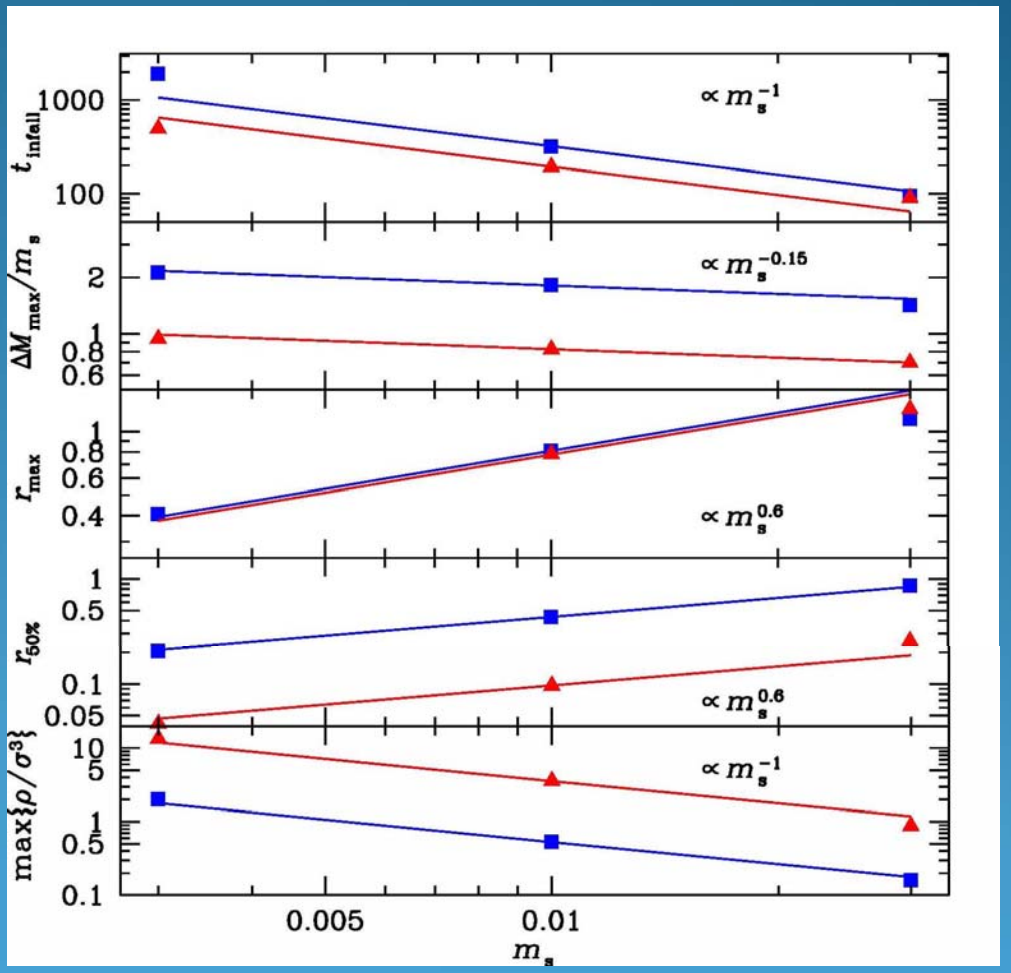
Effect of the Removal of the satellite

Radial profiles of the halo's pseudo phase-space density ρ/σ^3 (top), density ρ (middle), and the change in cumulative halo mass ΔM (bottom) for one of the satellite s shown in slide 3 but also including the removal of the satellite.



Effect of satellite Mass

The variation with satellite mass of time to fall in, t_{infall}, ΔM_{max}, r_{max}, $r_{50\%}$, and the maximum of ρ/σ^3 after the decay of a circular satellite orbit (red) or after the decay of a parabolic satellite orbit (blue). The lines are power-laws with exponent as indicated.



Effect of satellite Size

Like slide 5, except that satellite size r_s is varied and m_s = 0.01 kept constant.