

# 12 : GALAXY INTERACTIONS & MERGERS

## (12.1) Introduction

- (a) Importance of Interactions
- (b) Different Physical Regimes

## (12.2) Catalogs

- (a) Interactions
- (b) Pairs

## (12.3) Analytic Tools

- (a) Dynamical Friction
  - (i) Derivation of Retarding Force
  - (ii) Special Cases
  - (iii) Applications of Dynamical Friction
- (b) Tidally Driven Evaporation
  - (i) Tidal (Jacobi/Roche) Limit
  - (ii) Satellite Evaporation/Destruction
- (c) Adiabatic (Slow) Encounter
- (d) Impulse (Fast) Encounter

## (12.4) Numerical Simulations : Methods

## (12.5) Numerical Simulations : Results

- (a) Flyby & Tidal Tails
- (b) Major Mergers
  - (i) Global Behaviour
  - (ii) Behaviour of Stars
  - (iii) Behaviour of Gas
  - (iv) Fueling Starbursts & AGN
- (c) Minor Mergers & Satellite Accretion

## (12.6) Merger Relics

- (a) Elliptical Galaxy Formation
- (b) Counter-Rotating Disks
- (c) Polar Ring Galaxies
- (d) Shell Galaxies
- (e) Tidal Origin of Dwarf Galaxies