

A Global Approach to Quenching History

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Aim: describe empirically the evolving populations of galaxies with

- All allowed star-formation histories (independently of the link with DM)
-> colors(z), mass-metallicity(z)
- All allowed mass functions
-> TBMF(z), merging rates



OBSERVABLES

- Counts (optical-NIR-FIR)
- Color-Color ($z \sim 0$, $z > 0$)
- $N(z)$
- Luminosity functions(z)
- GSMF(z) (weak)

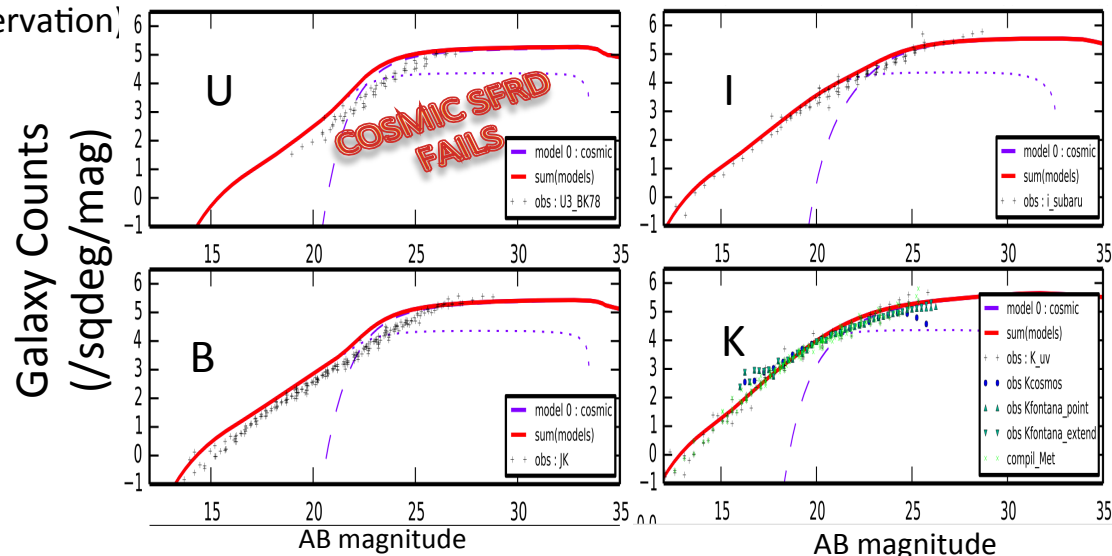
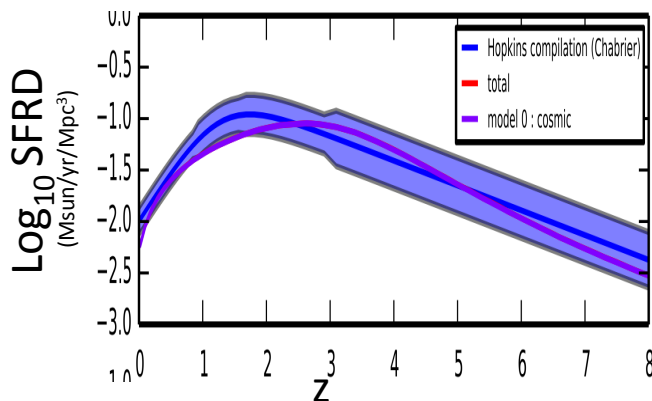
Modeling:

- Idealized SFH and SEDs (spatially unresolved):

PEGASE.2 code with parametric choice of SFH -> $SED(z)$, $SFR(z)$, $Z_{gas}(z)$, $Z_{stars}(z)$, $M_{stars}(z)$, $M_{gas}(z)$

- Total baryonic mass function : $N(M_{tot \text{ baryons}}) \rightarrow N(M_*)$

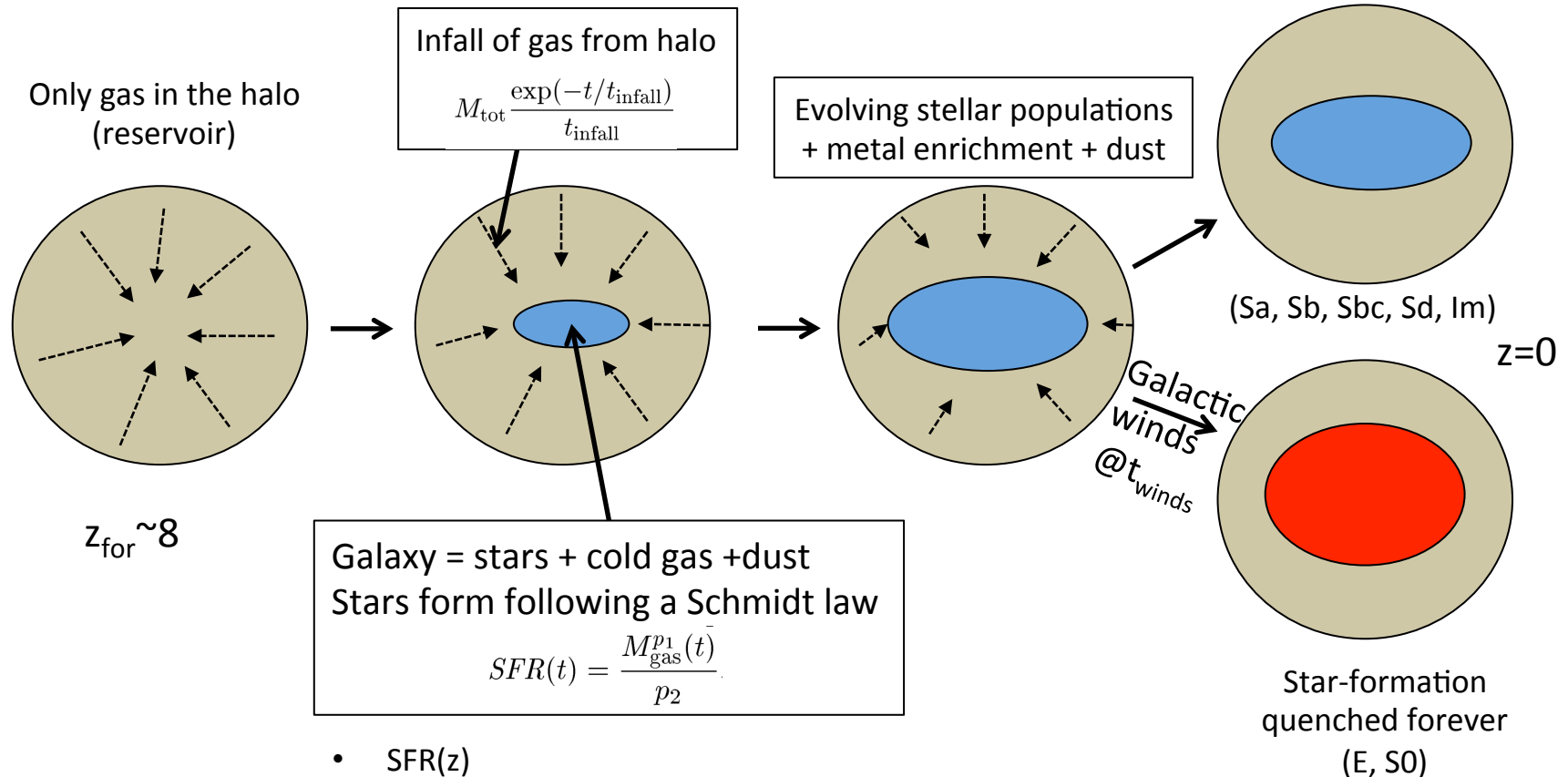
- Parametric (Schechter-like)
- Or non-parametric inversion (e.g. Le Borgne et al 2009)
(QUENCHING HERE + mass conservation)



PEGASE.2 in the « infall » mode

SHOWN : BARYONS ONLY

The total baryonic mass (halo + galaxy) is constant if there is no major merger



Outputs

- SFR(z)
- $Z_{\text{gas}}(z)$, $Z_{\text{stars}}(z)$
- SED(z)
- $M_{\text{stars}}(z)$, $M_{\text{gas}}(z)$
- $n_{\text{SN Ia}}(z)$, $n_{\text{SN II}}(z)$
- Extinction by dust(z)
- ...

- Sebastien Carrassou PhD : same kind of approach but
 - using raw images from deep surveys -> cancel selection effects
 - morphology – SED relation
 - environment

