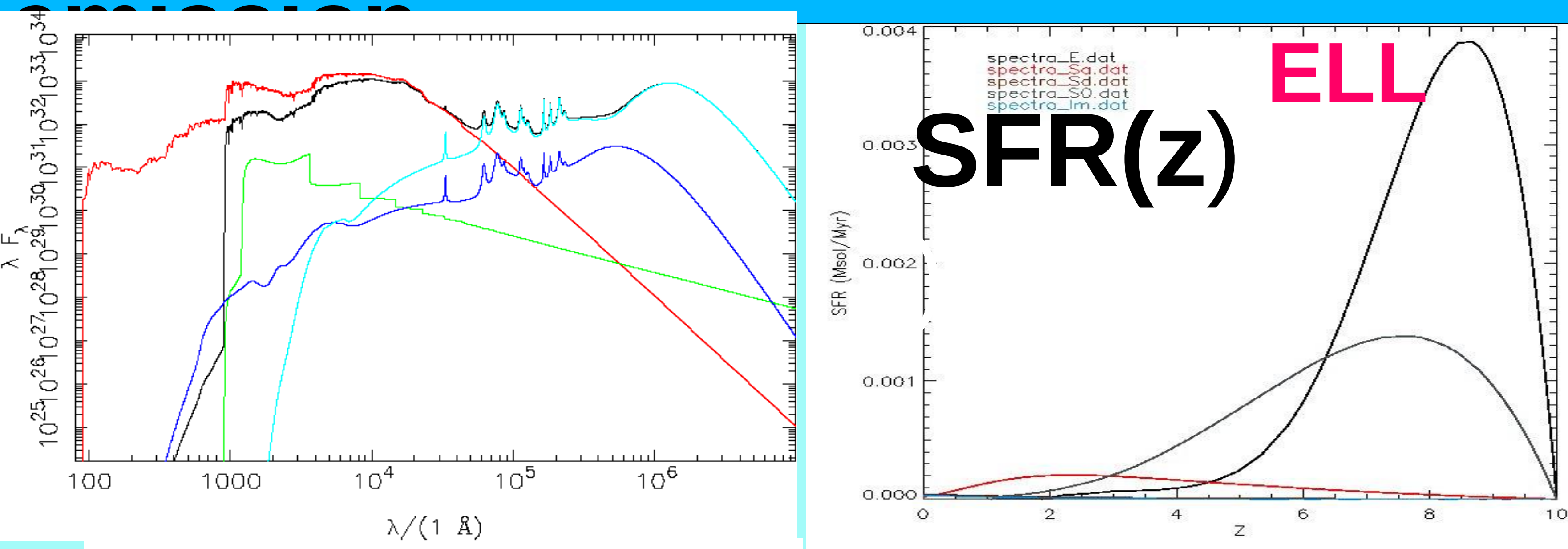


Supernovae versus AGN from disentangling the torus and cold grain IR emissions with the code Pegase.3

Brigitte Rocca-Volmerange , IAP, Paris

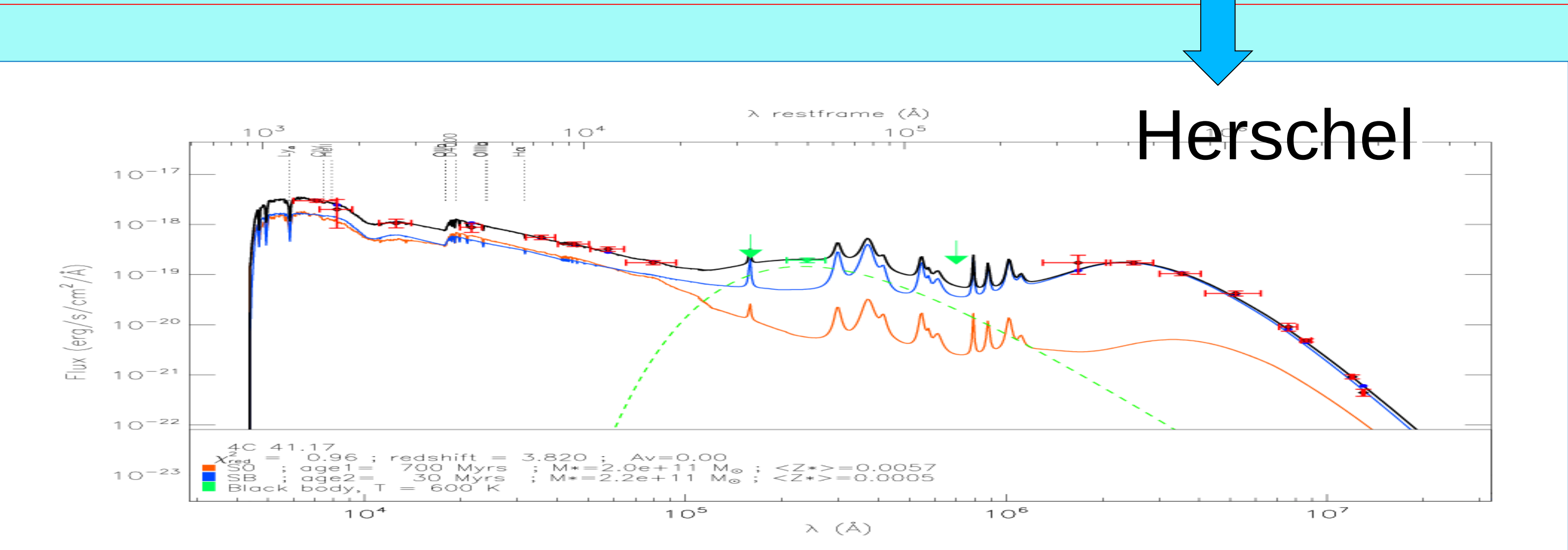
Collaborations Fioc(IAP) Drouart(Perth), Podigachoski, Barthel,(Groningen) De Breuck, Vernet (ESO)

Supernovae ejecta → metal enrichment with the code PEGASE.3 (near submission) Fioc & Rocca-Volmerange, 2016): Continuous evolution from SFH laws +infall+ outflows by galaxy types : Star evolution + metal ejecta + dust emission by Draine models + MonteCarlo transfer → continuous UV to -far IR/submm SEDs + SN numbers

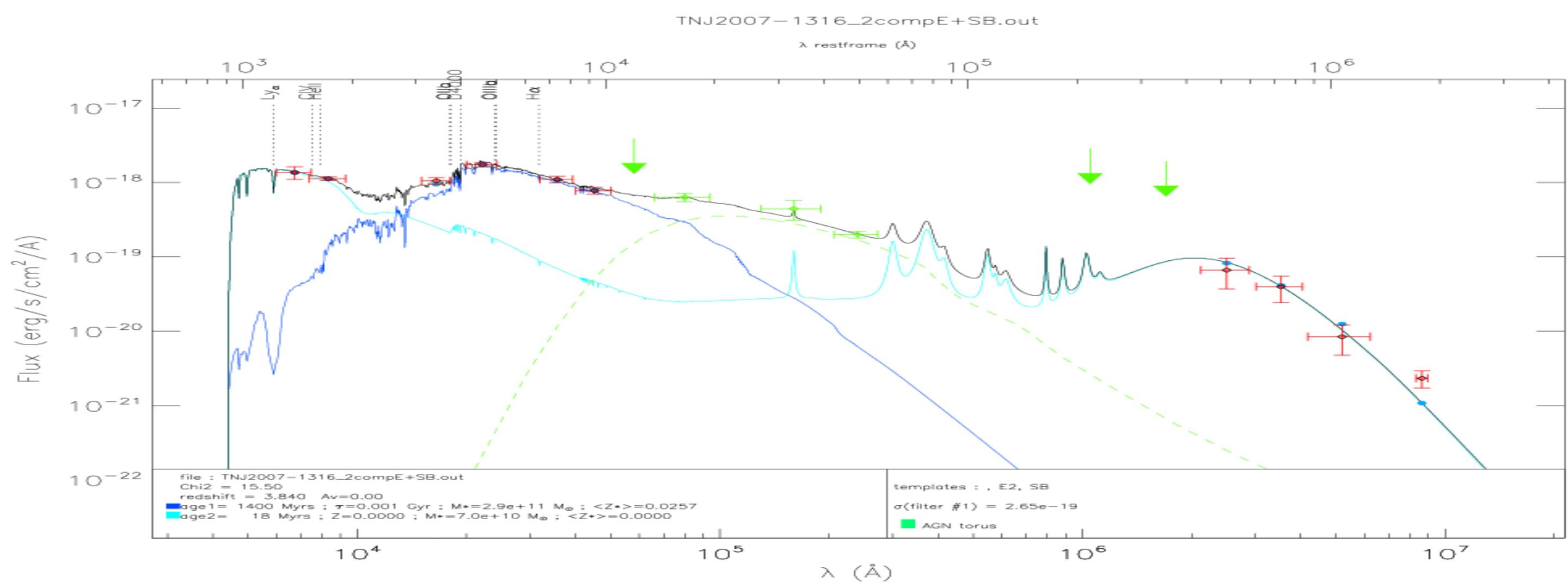
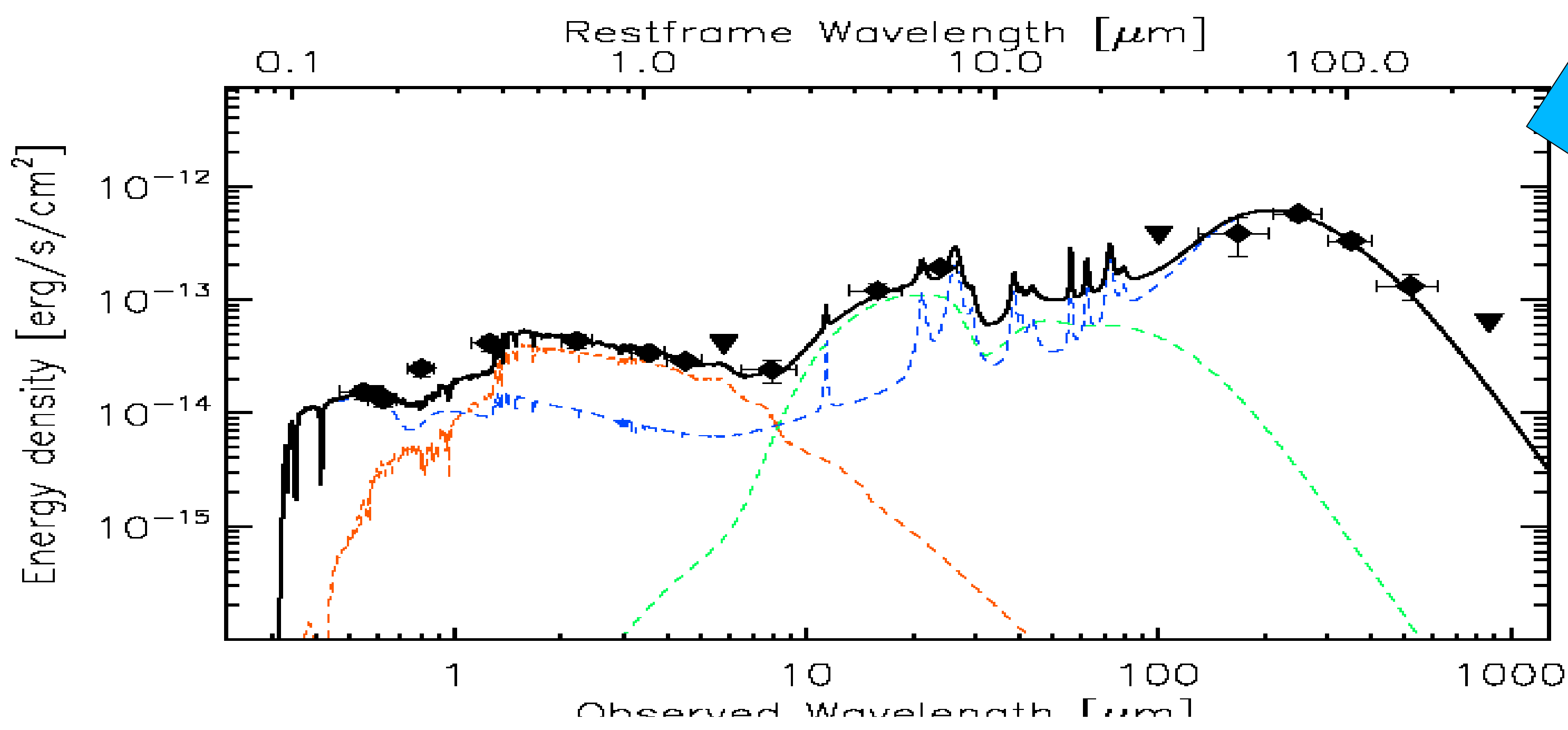


C, Si, dust , Neb, Stars Evolution with age

Continuous UV-farIR/submm SEDs : 3 components(old+young+AGNs) Rocca-Volmerange et al, 2013, 2015,



Herschel



Results:

- Stellar BH masses $10^9 M_{\odot}$
- Stellar Masses $\sim 10^{12} M_{\odot}$
- Star/BH masses 0.02

Ages IR SB noStar Forming + old Host elliptical galaxy

- Lumin. AGN

GALAXIES	Stellar Masses in solar mass	STELLAR Remnants in solar mass	Remnants/st ar mass ratio	Metals
4C41.17/starburst (z=3.8) Age → 30 Myrs	$2.0 \cdot 10^{11}$	$4.3 \cdot 10^9$	0,021	0.0057
MRC 0406-244 (z=2.427) Age → 45 Myrs	$2.1 \cdot 10^{11}$	$4.6 \cdot 10^9$	0,023	0.15

Stellar masses Remnants of Masses of supernovae $\sim 10^9 M_{\odot}$ Remnant/ Stellar Masses = 0.021

2 catalogs (Hergé, 3CR)~ 20 radio galaxies Drouart et al, 2016, Podigachoski et al, in

preparation) : obs $1 < z < 4$, model (black line): elliptical (red), burst (Blue), (green dashed) AGN models(Fritz et al 2006, Siebenmorgen et al, 2016

Future: MASSES, AGES by TYPES of SMG, HotDOG, and AGN fueling, SMBHs withJWST, ALMA,