The SFR is one of the key parameters for understanding galaxy evolution. The SFR can be derived through different indicators in a wide wavelength range, e.g., X-rays (tracing X-ray binary emission), UV (emission from recently formed massive stars); optical wavelengths (from the recombination lines of the young massive population), FIR (absorption and reemission by dust of UV light in the infrared) or radio wavelengths (supernova activity). Due to the different physical mechanisms and assumptions made to estimate the SFR it is of great importance to see how these SFR indicators compare to each other and which galaxy properties have a more important impact. One of the major problems when deriving SFR at shorter wavelengths is that they must be corrected by dust extinction. The main advantage of the SFR from the FIR emission is that it is not affected by dust extinction. In this work we compare various SFR indicators with each other (UV, IR, SDSS, total) by combining for the first time deep IR data from the latest PEP (PACS Evolutionary Probe, Lutz et al. 2011) and the Galaxy Evolution Explorer satellite (GALEX, Martin et al. 2005; FUV, NUV). We study a sample of ~ 100 galaxies up to z ~ 0.4 in the COSMOS and Lockman Hole fields divided into 4 spectral types (star forming (SF), composites, active galactic nuclei (AGN) and unclassifiable galaxies) and 4 morphological types (E, S0, Sab, Scd). For the SF and unclassifiable galaxies we calculate dust extinctions from the UV slope, the Hα/Hβ ratio and the Lα/Hβ ratio. We find a tight correlation between the dust extinction and both the Lα and the metallicity. The agreement between the SFR indicators is very good for the bulk of the galaxies, and dispersions are smaller than typical SFR uncertainties (σ = 0.30). The galaxies follow the prescriptions of the Fundamental Plane (M-Z-SFR) derived by Lara-López et al. 2013.

SFR estimates (Kennicutt 1998):
- SFR from L(Hα) (dust correction using UV slope) SFR(M☉ yr⁻¹) = 1.4 × 10¹⁵L(Hα)(erg s⁻¹).
- SFR from Hα (dust correction using Hα/(Hβ)) SFR(M☉ yr⁻¹) = 7.9 × 10¹⁴L(Hα)(erg s⁻¹).
- SFR from Lα (NO dust correction) SFR(M☉ yr⁻¹) = 4.5 × 10¹⁴L(Hα)(erg s⁻¹).
- SFR total (absorbed and unabsorbed) SFR(M☉ yr⁻¹) = SFR(IR)+SFR(FUV).

SFR comparison:
- Excellent agreement between the SFR indicators for the whole sample of SF galaxies (Fig. 2).
- Late type galaxies behave similar to the SF sample.
- Unclassifiable galaxies show larger dispersions than SF galaxies.
- Important differences (~ 10%) between SFR(IR) and SFR(FUV) at high mass.

Fig. 4: SFR vs Mass: The SFR of SDSS galaxies follows the MS relation obtained for the whole SDSS sample (m = 0.70, m = 0.77, Brinchmann et al. 2004). The AGN populations and unclassifiable galaxies located below the MS (AGN preventing star formation or selection effects?).
- The best-fitting slope for the late type galaxies is larger (m = 0.32) and shows an offset in the zero point due to the presence of late type galaxies with low SFR.
- The majority of E and S0 galaxies lie below the MS.