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[α/Fe] traced by H II regions from the CALIFA survey:

The connection between morphology and chemical abundance patterns

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25000 HII-областей для 924 галактик CALIFA

- Обилие кислорода – в газе, ионизованном молодыми звездами, по эмиссионным линиям.
- Обилие железа – моделями звездных населений??? Которые дают [Z/H] !!!

same band as the ADF (Mejía-Narváez et al. 2020, e.g.). Due to the nature of the adopted SSPs, this parameter is a direct proxy of the luminosity-weighted Iron abundance, [Fe/H], for a solar abundance of 12+log(Fe/H)=7.50 (Asplund et al. 2009). It is worth noting that we derive [Z/H] using SSP-models with solar composition (i.e., [α/Fe]=0). This may create a bias in [Fe/H] towards higher values, that can be as large as ~30%. However, this bias does not affect either our qualitative results or the reported trends, although it may produce relative offsets in the absolute reported abundances. Hereafter we refer to this parameter as [Fe/H]; and (*iii*) the gas phase oxygen abundance, 12+log(O/H),

Тот самый Асплунд (2009): металличность – это кислород

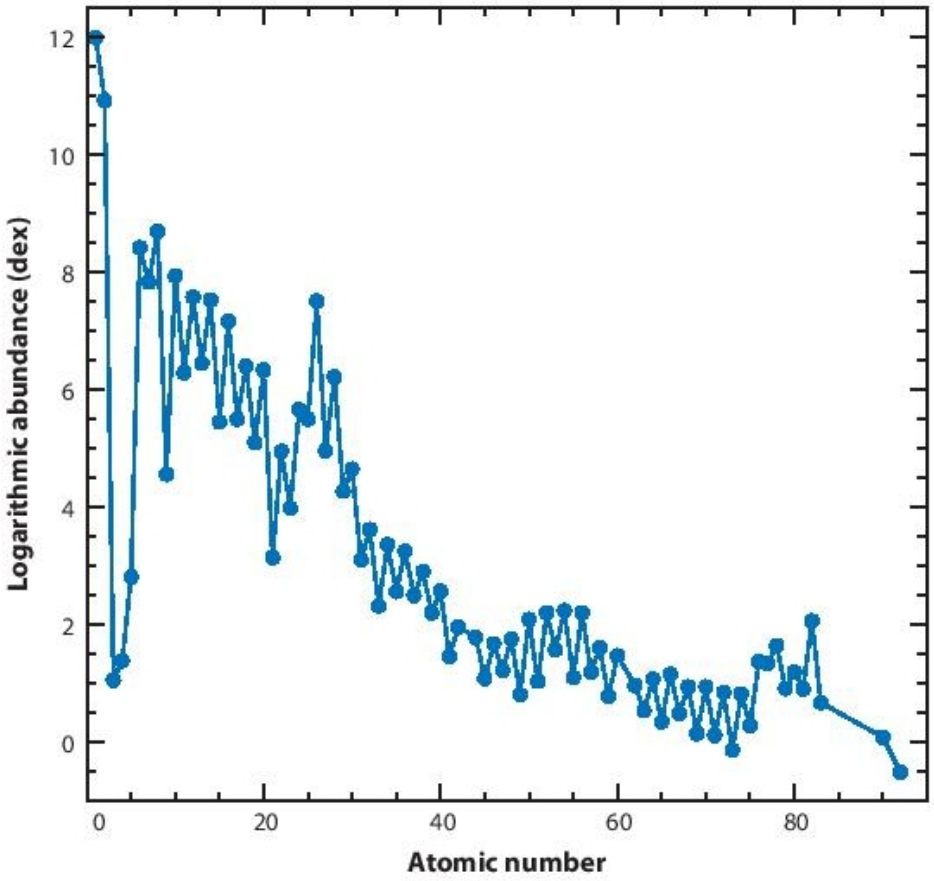
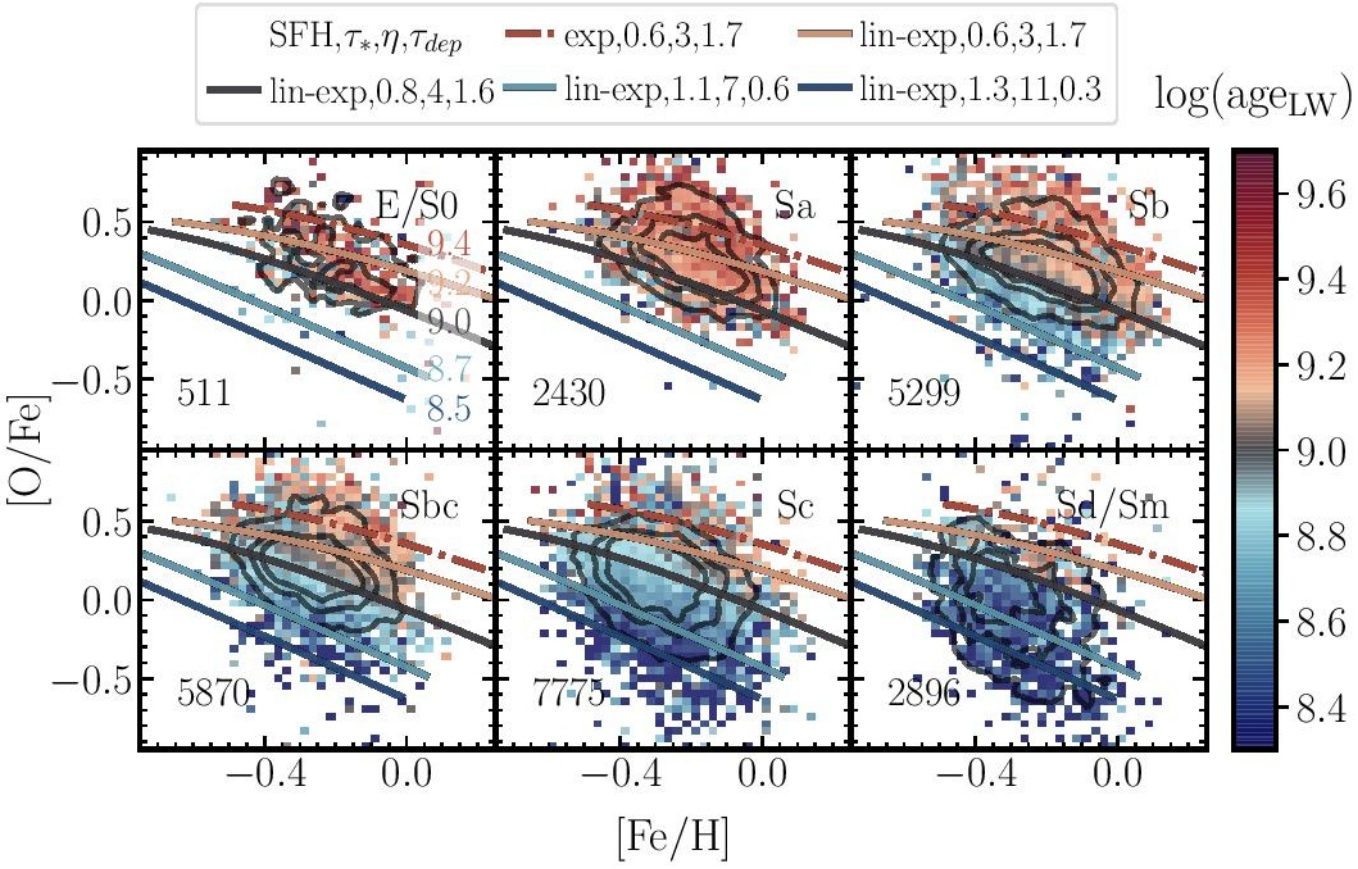
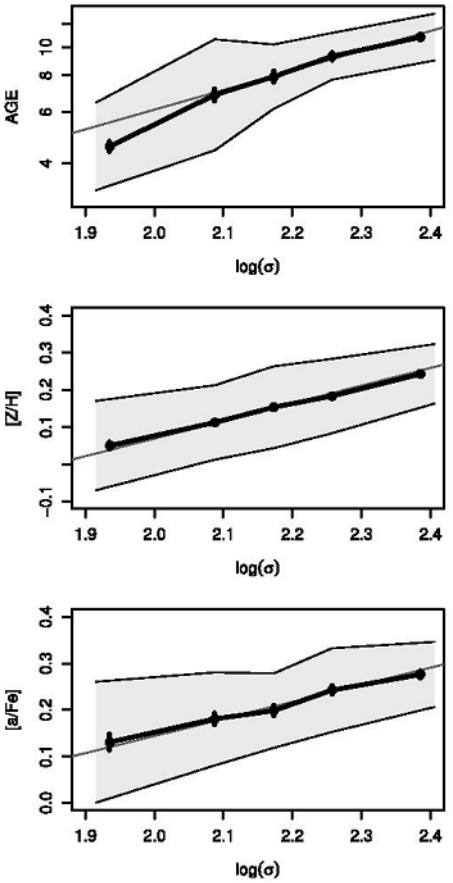


Figure 4

The present-day solar photospheric elemental abundances as a function of atomic number. As throughout

И что же это мы насчитали?





Отношение текущей металличности к среднеисторической

Nelan+05

Выводы, соответственно, неверные

4. Conclusions

We present for the first time an exploration of the α-enhancement in galaxies based on the comparison of the gas-phase oxygen abundance ([O/H]) with the stellar metallicity ([Z/H]) for a large sample of H II regions and aggregations extracted for a representative sample of galaxies in the nearby Universe. From this exploration we show that:

1. [O/Fe] presents a decline with [Fe/H] similar to the one observed for [α/Fe] in the MW and early-type galaxies.
2. The zero-point (slope) of this relation, i.e., the absolute scale of [O/Fe], presents a strong (mild) dependence on both the stellar mass and morphology of the galaxy in agreement with early scenarios and ChEMs (Matteucci 2003; Calura & Menci 2009; Yates et al. 2013)
3. We reproduce both trends using chemical evolution models by either (i) assuming that the SFH, SFE and η or (ii) the high-mass cut-off the IMF increases with the stellar mass of galaxies in agreement with Gunawardhana et al. (2011).

We have presented in this study the most relevant results of our on-going exploration. In a forthcoming article, Expinosa-Ponce et al. in prep, we will provide with further details on the modelling, exploring the reported trends galaxy by galaxy and in different regions within them.