Introduction
San Lázaro basin (SLB) is located in the southern boundary of the California Current System (CCS) and its conditions allows for the well preserved laminated sediments of the sea floor.

The carbon isotopic composition of the main processes in the study region where obtained from instrumental data and information from the laminated sediments in SLB.

Results
Time series for the last century of organic and inorganic carbon isotopic composition

Discussion
How much is the Suess Effect observed in an eastern boundary upwelling system as is the CC?
To know the origin and redistribution of the CO₂ in the ocean we use the stable carbon isotopic composition in two phases

The slopes of the carbon isotopic composition in the carbonates (carb) and in the particular organic carbon (POC) show a similar tendency to atmospheric carbon isotopic composition, that means the Suess Effect, but the differences between them mean the presence of other processes.

We calculated δ¹³C of the mixed layer considering a constant fractionation fraction of 22.5 ‰, and compared it with two planktic foraminifera that live in different conditions.

There are no significant differences in the slopes

The results obtained from the assumption of the constant fractionation in time generated from the observations (Rau et al., 2000) show that there is no change in fractionation, and therefore the change is in the isotopic composition of the dissolved inorganic carbon in the mixing layer, from which fractionate the planktic foraminifera and phytoplankton.

Conclusions
• There are two periods with different behaviors in the CO₂ fugacity in the southern region of the California Current (CC), the months from January to June (sink), and the months from July to December (source). The time series of both periods show a tendency to increase towards the present.
• The slope of fugacity is higher from June to December than from January to June probably due to excess residual carbon during the summer probably is the result of an imbalance of the Redfield ratio between carbon and nitrate.
• The time series of the last thirty years for the δ¹³C_carb, δ¹³C_carb, δ¹³C_carb reflect the Suess Effect. However, the slopes of the isotopic composition of both carbonate and POC are different from atmospheric due to the importance of vertical mixing in the CC.