Dear Bob,

You asked: "Would it be possible to some way account for the warm water that's left over from strong El Nino events–that causes the upward shifts in the sea surface temperatures of the South Atlantic, Indian and West Pacific oceans?" Here is my view on what is happening in West Pacific and Indian oceans. I am avoiding now from talking about Atlantic ocean because I don't know adequate indexes (like ENSO and PDO) describing natural variability there.

At first about West Pacific (90S-90N 100E-180E). Again I used HadSST3 dataset from Climate Explorer site. Consider SST in this region from 1900 till 2012 (Fig. 1). As influencing on SST factors here I considered PDO (without lag) and volcanic aerosols reconstruction (I forgot and didn't mark what was the lag :) Something about several months. It can be checked later). According to our hypothesis there should be two upward shifts (with near the same magnitude) in somewhere in 1925/1926 and 1987/1988. Shift of 1987/1988 is observed. But in order to get adequate reconstruction we must assume that first shift happened here in 1936 instead of 1925/1926 (I don't have explanations for this. It needs additional investigation). Performing linear regression on these three factors we obtain quite adequate reconstruction (Fig. 2). Last years from 1981 are presented on Figure 3. Now I will write about Indian and will provide explanations after.

So about Indian ocean (90S-30N 30E-100E). SST in this region from 1900 till 2012 are presented on figure 4. As influencing factors here I considered ENSO Nino34 index (with 4 months lag) and volcanic aerosols reconstruction (with the same as in West Pacific lag). Also the same climate regime index as for West Pacific is used. Reconstruction obtained by linear regression on these three factors is shown on figure 5. Last years from 1981 are presented on Figure 6.

So what are the conclusions? In some places I agree with you theory, in some my opinion is different. Like you I don't see continuous anthropogenic warming trends. Like you I think that often SST have upward shifts after El Nino events. At first, should be mentioned our hypothesized 1925/1926 and 1987/1988 climate regime shifts. But also by careful look on Nino34 index it can be noticed that sharp increases and slow return are quite common in this time series from 1900. The main difference in our views is that from my point of view most of SST anomalies are directly linearly associated with ENSO (So it is possible to perform linear regression analysis). But I think our views have potential for becoming more close and we will benefit from this together. So I hope that our discussion will continue and wait for your response. Also I'm ready to answer on additional questions.

All the calculations presented below were made in Excel by means of standard functions. Files including them could be downloaded by following links:
https://www.dropbox.com/s/4ndx7o5dyjhtdbt/West%20pacific.xls
https://www.dropbox.com/s/e9pqvztlkr8c24j/Indian.xls

Best wishes,
Pavel Belolipetsky

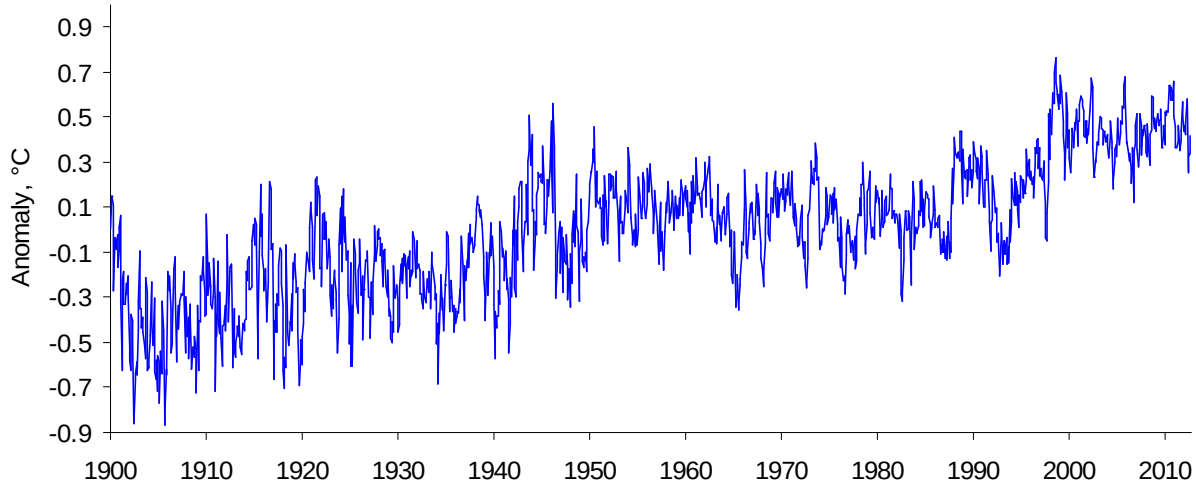

Fig. 1. SST anomalies in West Pacific (90S-90N 100E-180E), HadSST3 dataset.

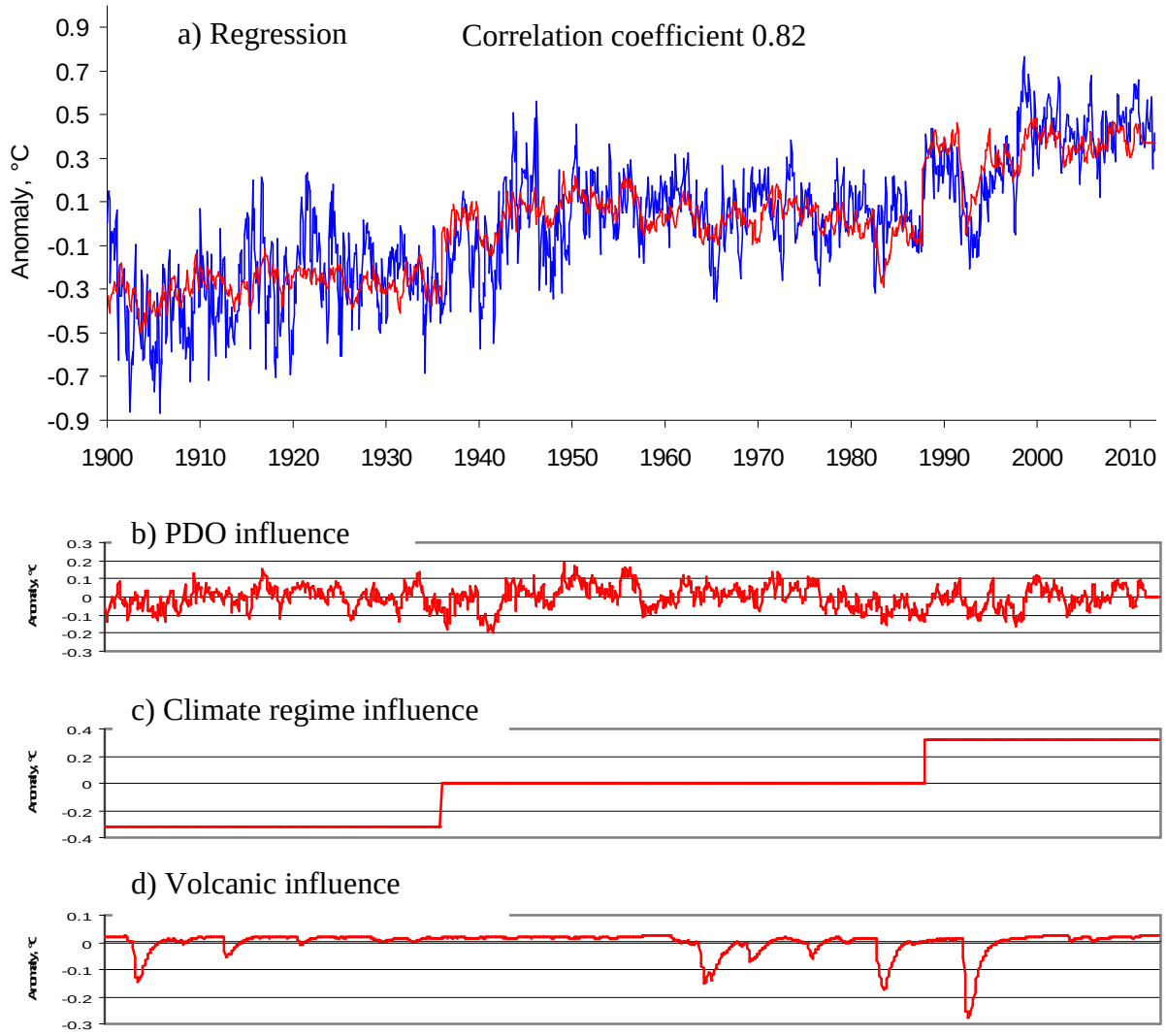

Fig. 2. a) Blue line - anomalies in West Pacific (90S-90N 100E-180E), red line - linear regression on ENSO, volcanic aerosols and climate regime, studied by 1900-2012 years; b) ENSO influence; c) climate regime influence; d) volcanic aerosols influence.

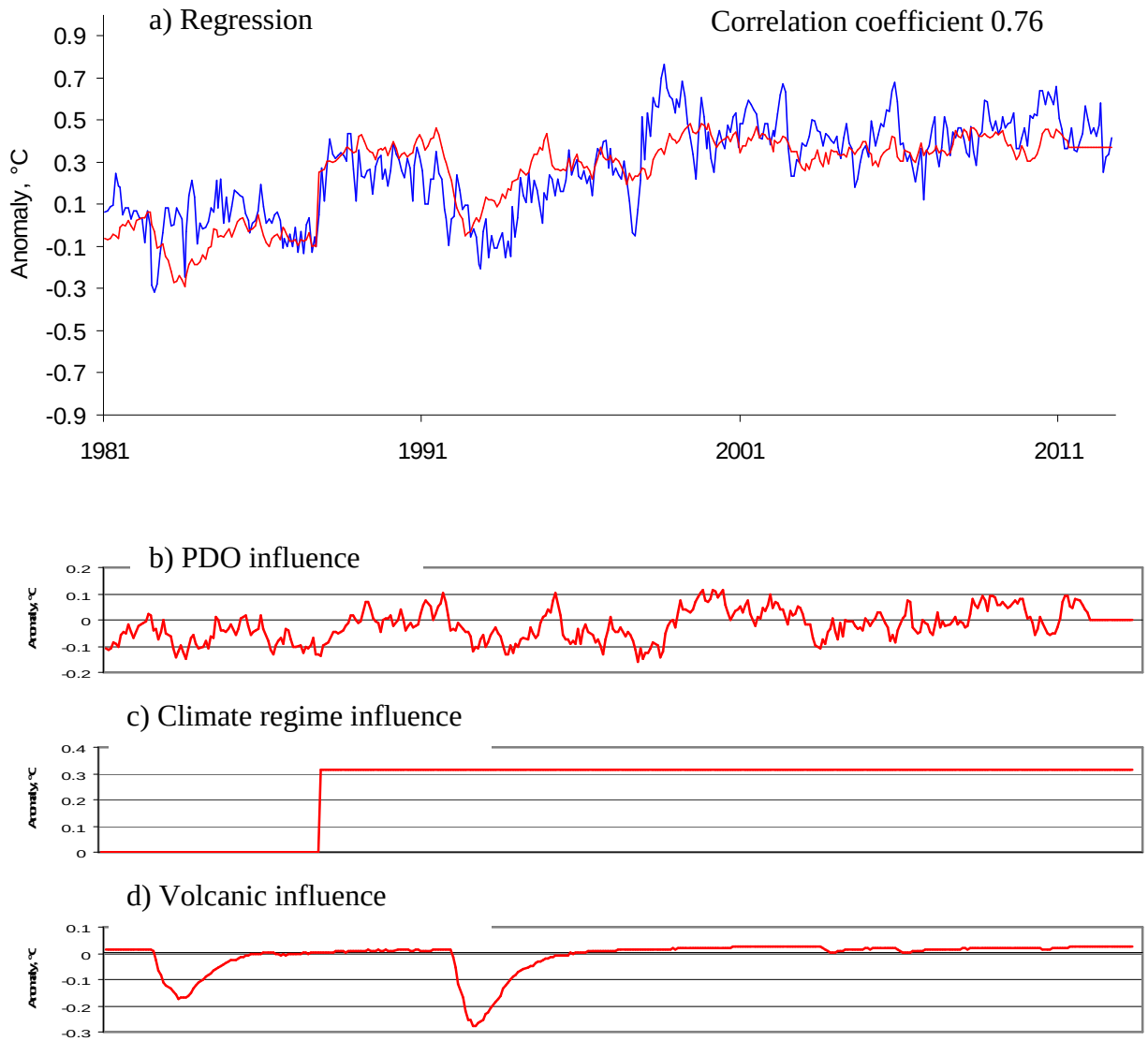

Fig. 3. Enlarged part of figure 2.

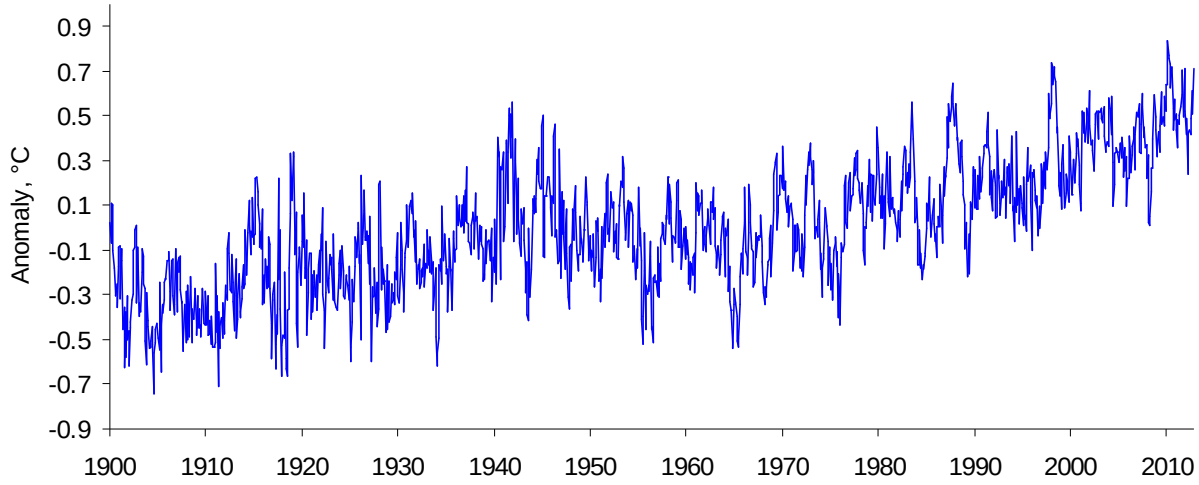

Fig. 4. SST anomalies in Indian ocean (90S-30N 30E-100E), HadSST3 dataset.

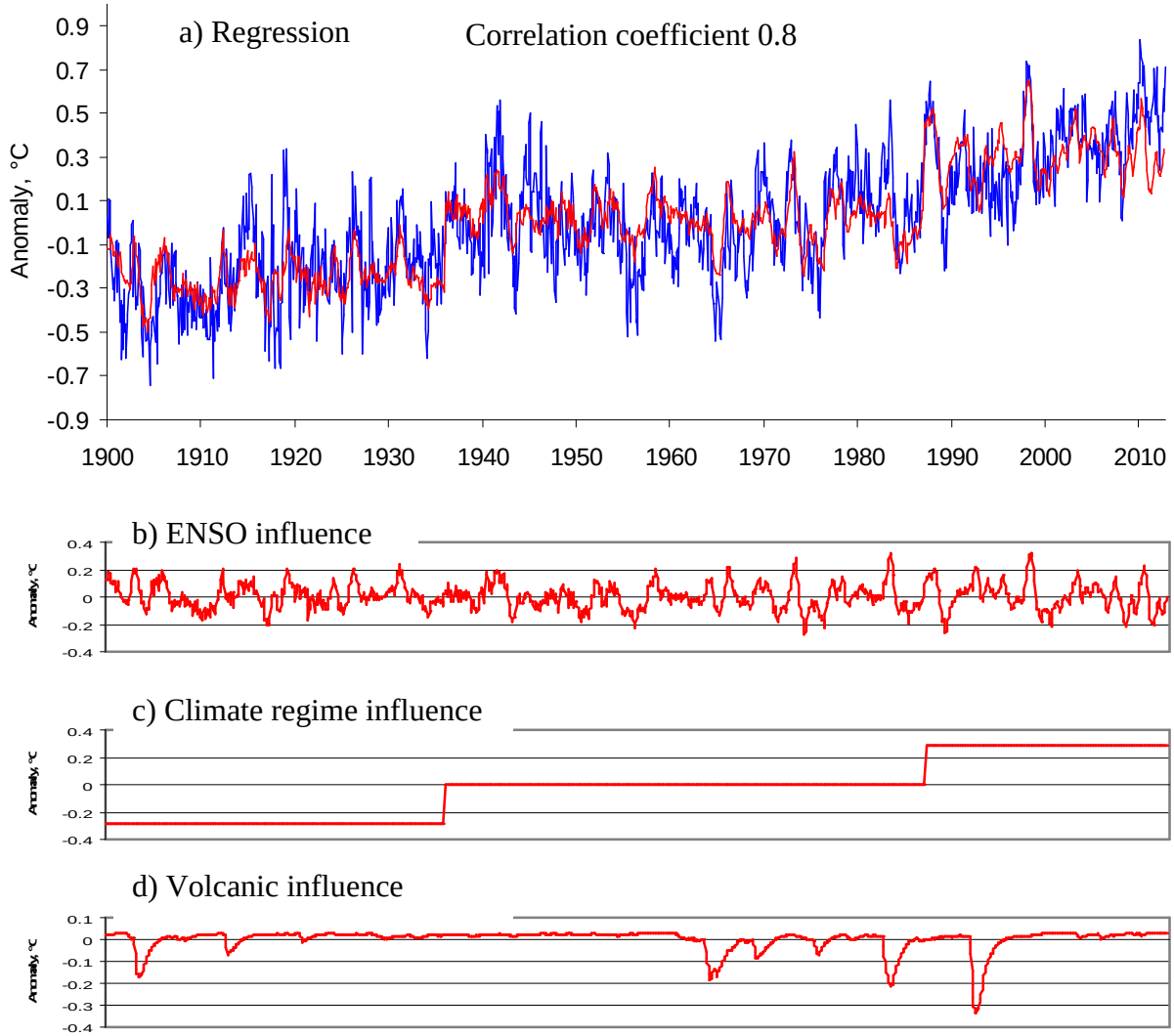

Fig. 5. a) Blue line - anomalies in Indian ocean (90S-30N 30E-100E), red line - linear regression on ENSO, volcanic aerosols and climate regime, studied by 1900-2012 years; b) ENSO influence; c) climate regime influence; d) volcanic aerosols influence.

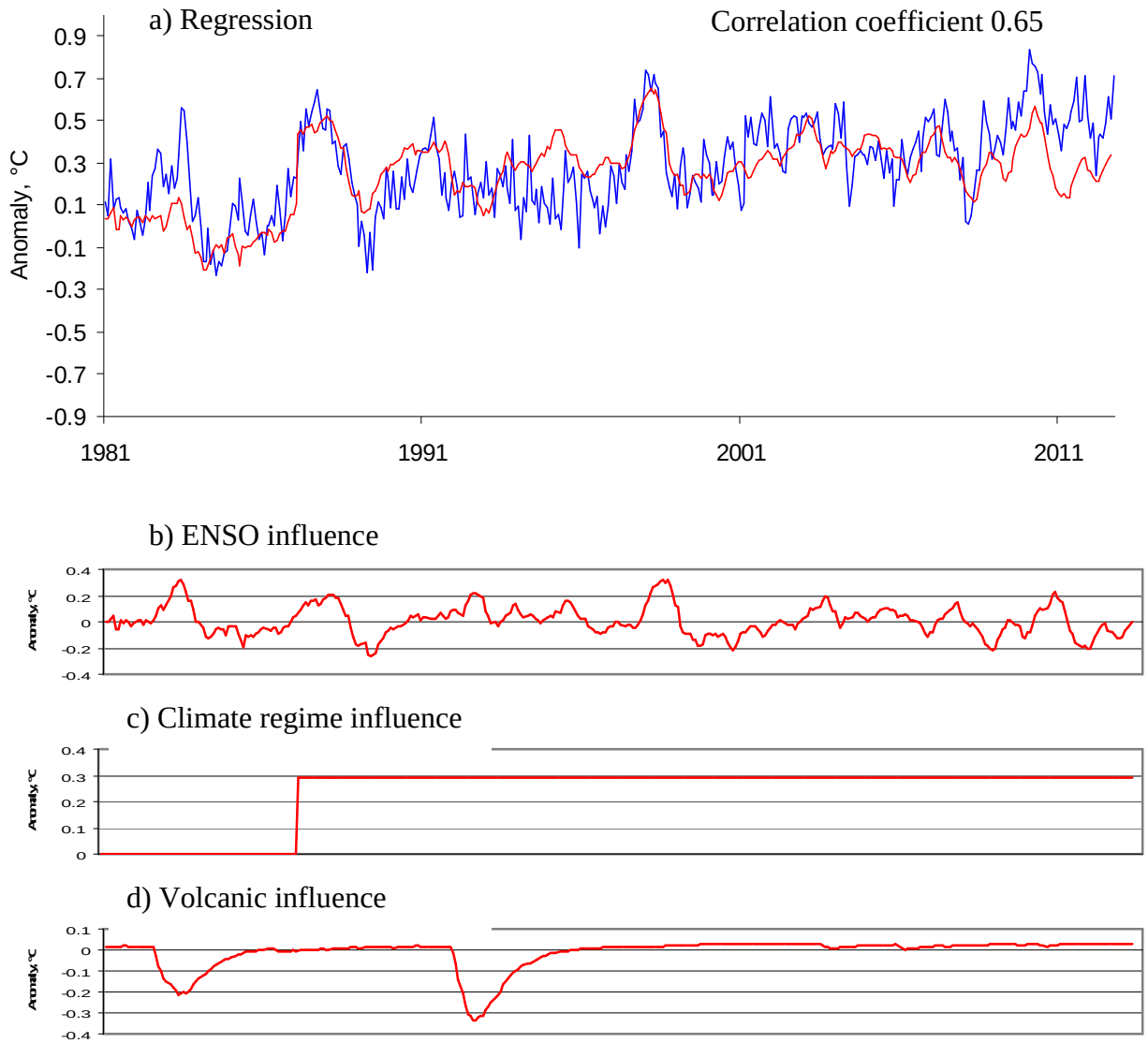

Fig. 6. Enlarged part of figure 5.