To remove possible biases in the tide gauge reading due to the use of different tide gauge benchmark we do the following:

Input: PSMSL monthly tide gauge records

SLCCI monthly sea level anomalies above MSS2015 in a 0.125 x 0.125 grid.

1. Compute the mean over the interval 1993-2015 of each PSMSL tide gauge and subtract the mean from the original tide gauge time-series to obtain tide gauge anomalies
2. Compute the mean over the same time interval 1993-2015 at the nearest altimeter point at the tide gauge and add it to the tide gauge anomalies. Note that the altimeter values are given above the mean sea surface MSS2015 (check with the SLCCI manual)

In this way we have the tide gauge time-series referred to the altimeter mean sea surface (MSS2015 augmented by the difference between the MSS over 1993-2015 and the MSS2015).

Both tide gauge and altimeter nearest point provided are at the moment not demeaned and provided in a MATLAB workspace.

The data needed for 1+2 are:

**In WS TG :**

L: station coordinates (units: degree)

MDAC: monthly tide-gauge time-series corrected for monthly dynamic atmospheric correction (DAC) (units: mm)

**In WS altimetry :**

xccisla: monthly altimeter time-series corrected for all corrections included DAC (units: m)

outc: distance between altimetry and tide gauges, lon and lat of altimeter point

xccisla\_an: monthly anomalies altimeter time-series corrected for all corrections included DAC (units:m)

N.B. VLM is at the moment not yet corrected in the data, we should consider to apply an estimation to account to post glacial rebound (e.g. Peltier from PSMSL website).

**al\_seldemean.d35**

L1: lon

L2: lat

L3: distance between tg and altimeter gridpoint selected

L4: mean in mm of ts of altimeter subtracted from data

**ts\_seldemean.d35**

L2: lon

L3: lat

L7: mean in mm of tg record subtracted from data