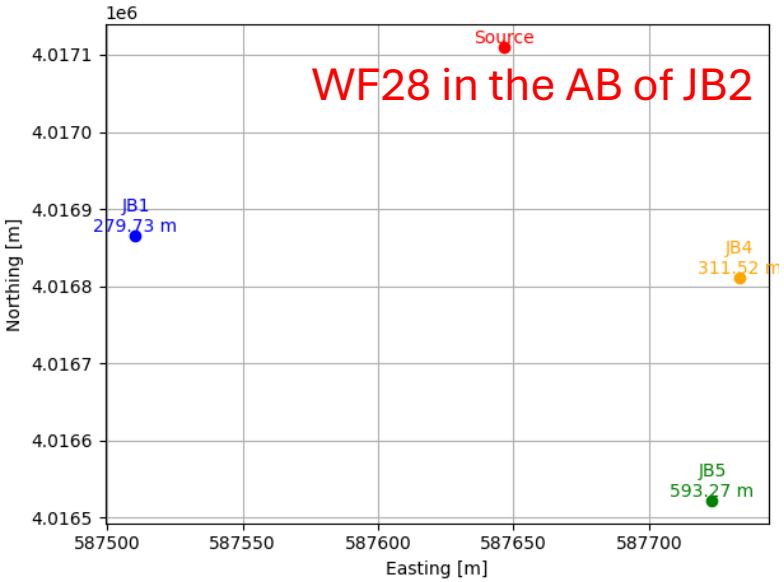
Analysis of raw acoustic data from JB hydrophones to positioning tests

Carlos Quiroz and Dídac Diego-Tortosa work

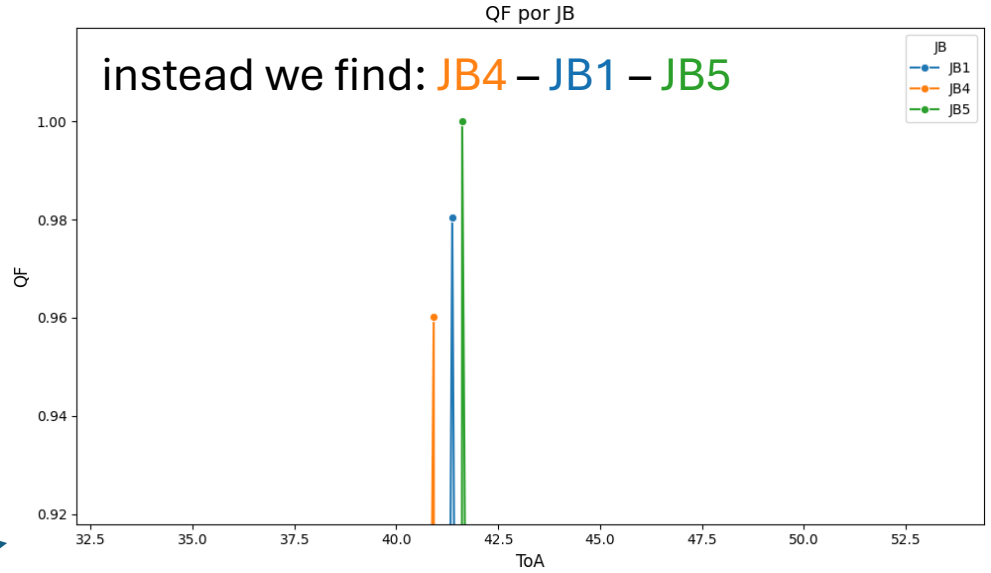
Objective (suggested by Giorgio):
is it possible positioning an AB from the JB hydrophones raw acoustic data?

There is a period with 3 JBs active: possible 2D reconstruction

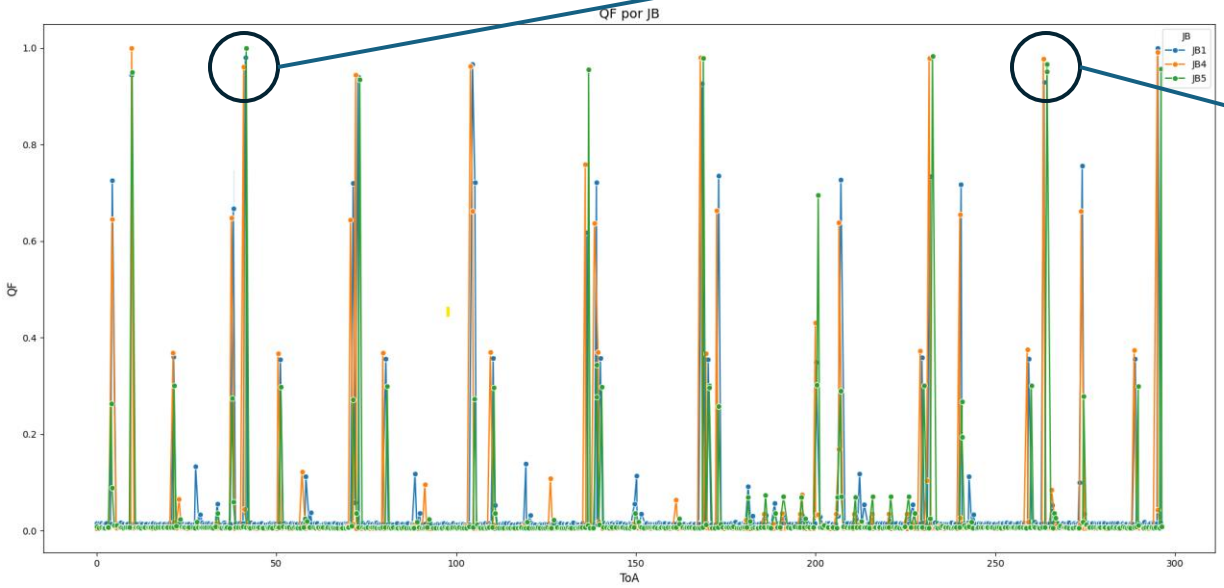
Is the raw data synchronized?



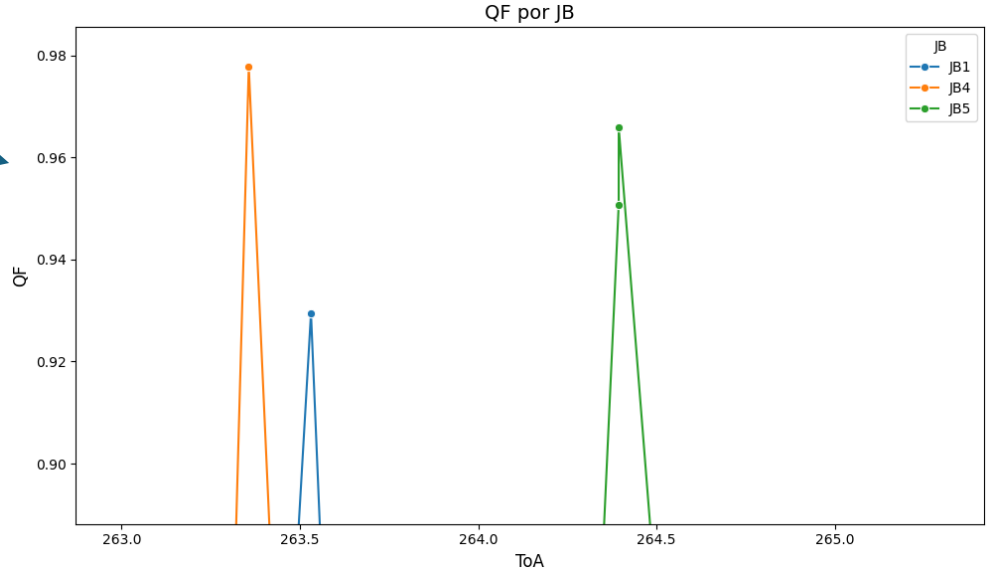
Taking account the distances between source – JBs, we expect this arrival order:
JB1 – JB4 – JB5



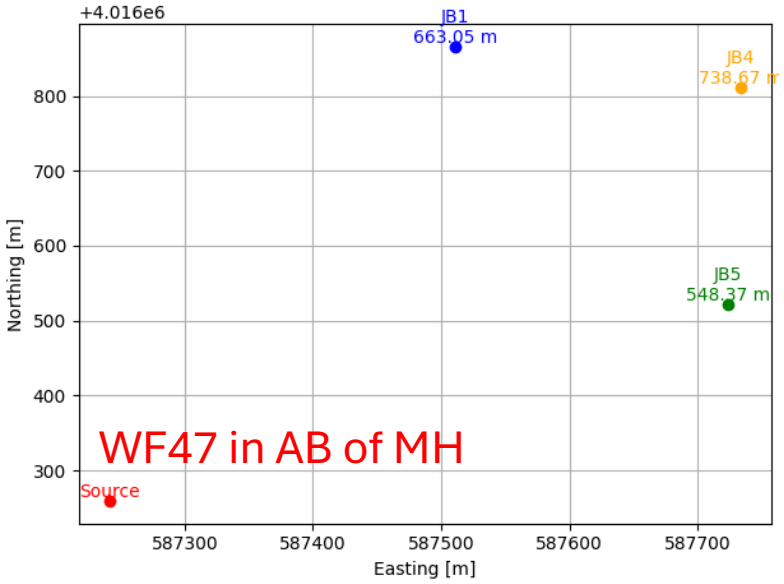
norm-xcorr similar to KM3NeT-ADF: WF28 × JB raw acoustic signals (from _SIG.h5 files)



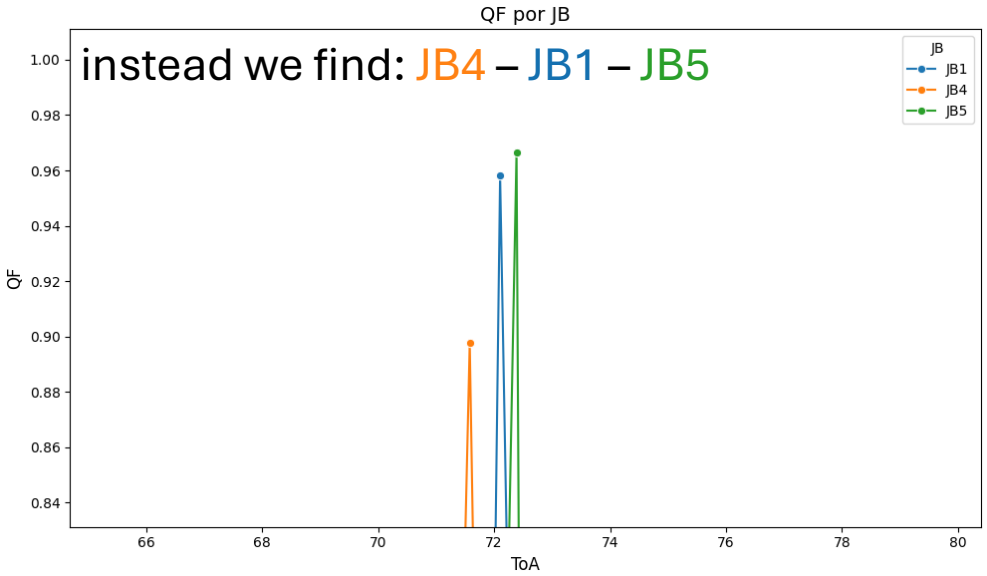
These are xcorr peaks corresponds to WF28:
Spectrogram checked



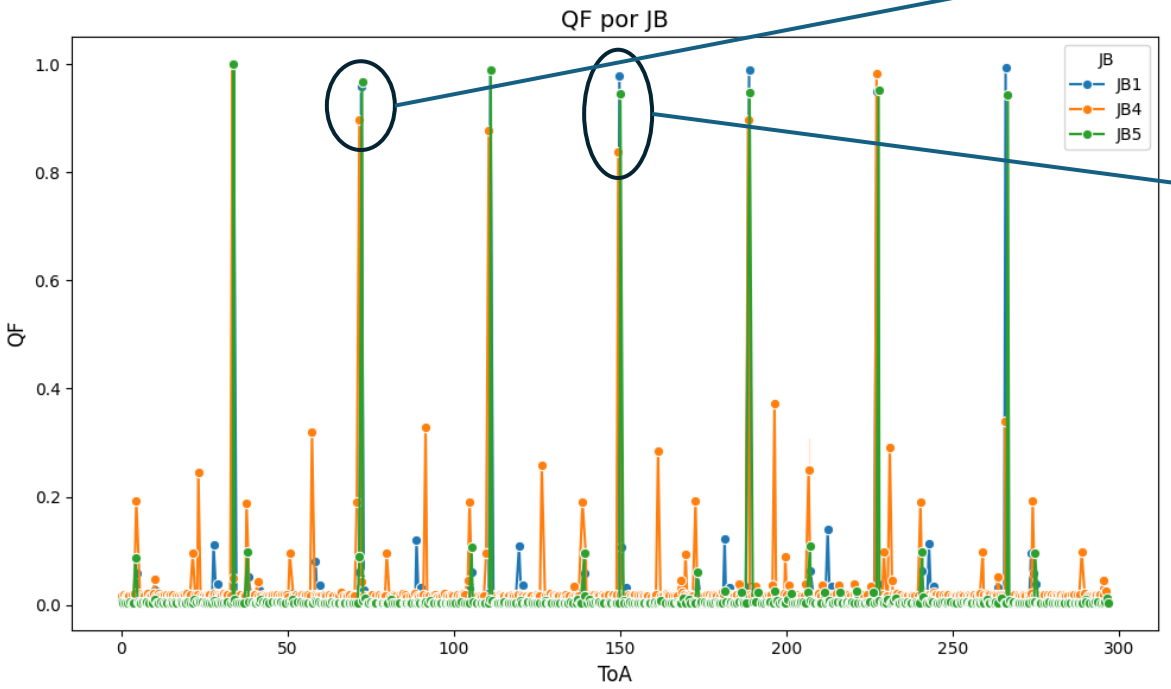
Is the raw data synchronized?



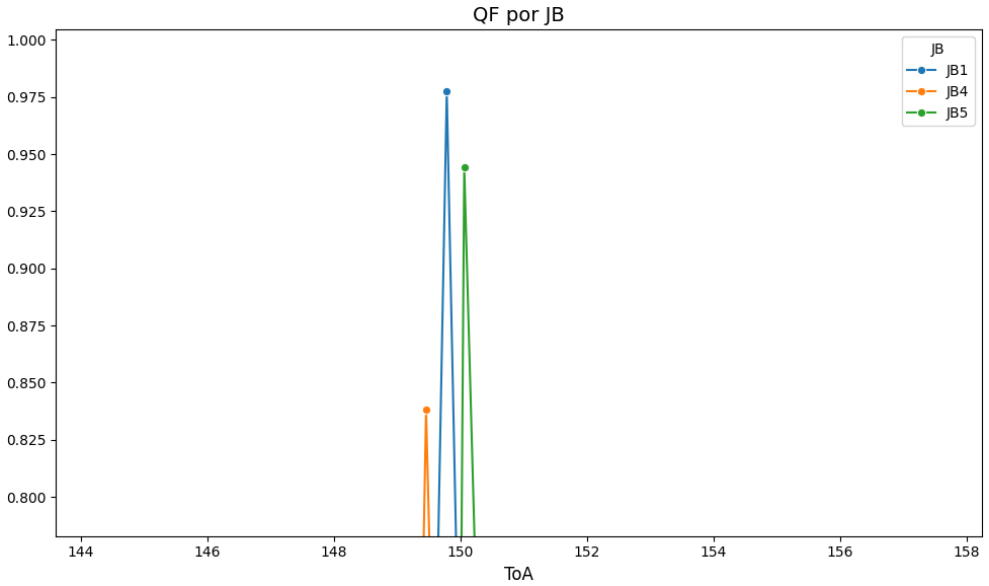
Taking account the distances between source – JBs, we expect this arrival order:
JB5 – JB1 – JB4



norm-xcorr similar to KM3NeT-ADF: WF47 × JB raw acoustic signals (from _SIG.h5 files)



These are xcorr peaks corresponds to WF47:
Spectrogram checked



Is the raw data synchronized?

It is clear that this is not the case.
This may be because the only timestamp we have is in the title: YYYYMMDD_HHmmSS (low resolution).

Solution:
Add in a metadata section the unixtime (more precise in ms than in s) that marks the start of the registration.