



Supplement of

Wave height return periods from combined measurement–model data: a Baltic Sea case study

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S1 Additional figures of fits to data

These Figures (Fig. S1–S6) are as Fig. 7 in the manuscript, but for different thresholds for the POT data and using WAM (instead of SWAN) as the primary wave hindcast. For an explanation of the different data sets (SWAN- χ^2 , WAM-filtered etc.), please see Table 1 in the manuscript.



Figure S1: Fits to annual maxima and POT values (threshold u = 4.0 m) of the SWAN data. The top panels are fits to the original observations and model values with an added synthetic χ^2 -variability. The bottom panels are fits to the original model data and low-pass filtered observations. In the top panels this single realisation of added χ^2 -variability has purposefully been chosen to closely match the ensemble averages in Table 3 of the manuscript.



Figure S2: As for Figure S1 but with a threshold of u = 4.5 m. This figure is identical to Fig. 7 in the manuscript.



Figure S3: As for Figure S1 but with a threshold of u = 5.0 m.



Figure S4: As for Figure S1 but for WAM data.



Figure S5: As for Figure S1 but for WAM data and with a threshold of u = 4.5 m.



Figure S6: As for Figure S1 but for WAM data and with a threshold of u = 5.0 m.