Supplementary Materials to

Identifying the frequency dependent interactions between ocean waves and the continental margin on seismic noise recordings

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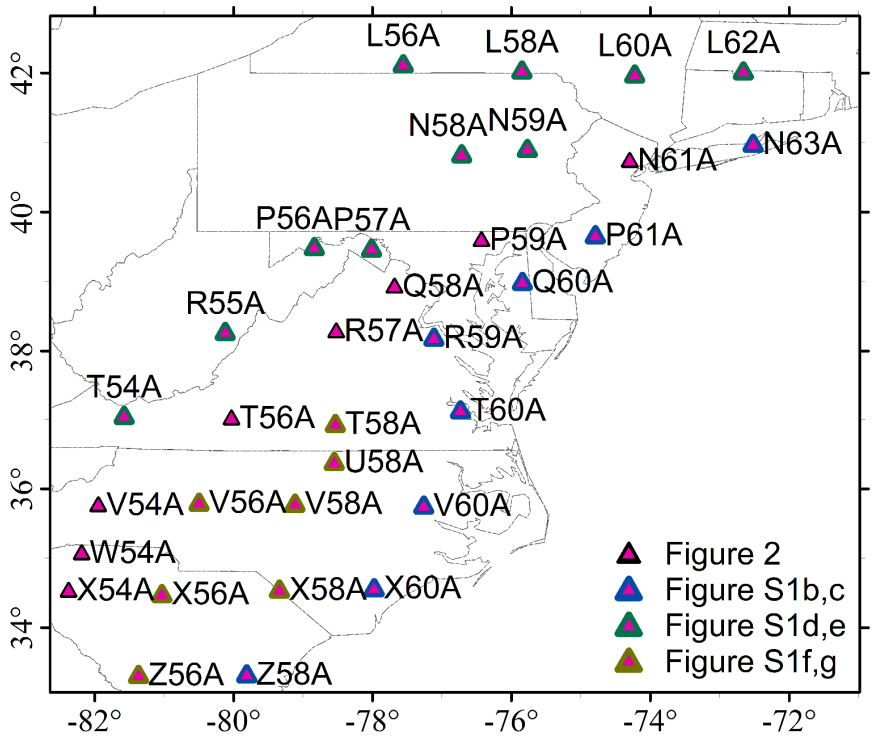
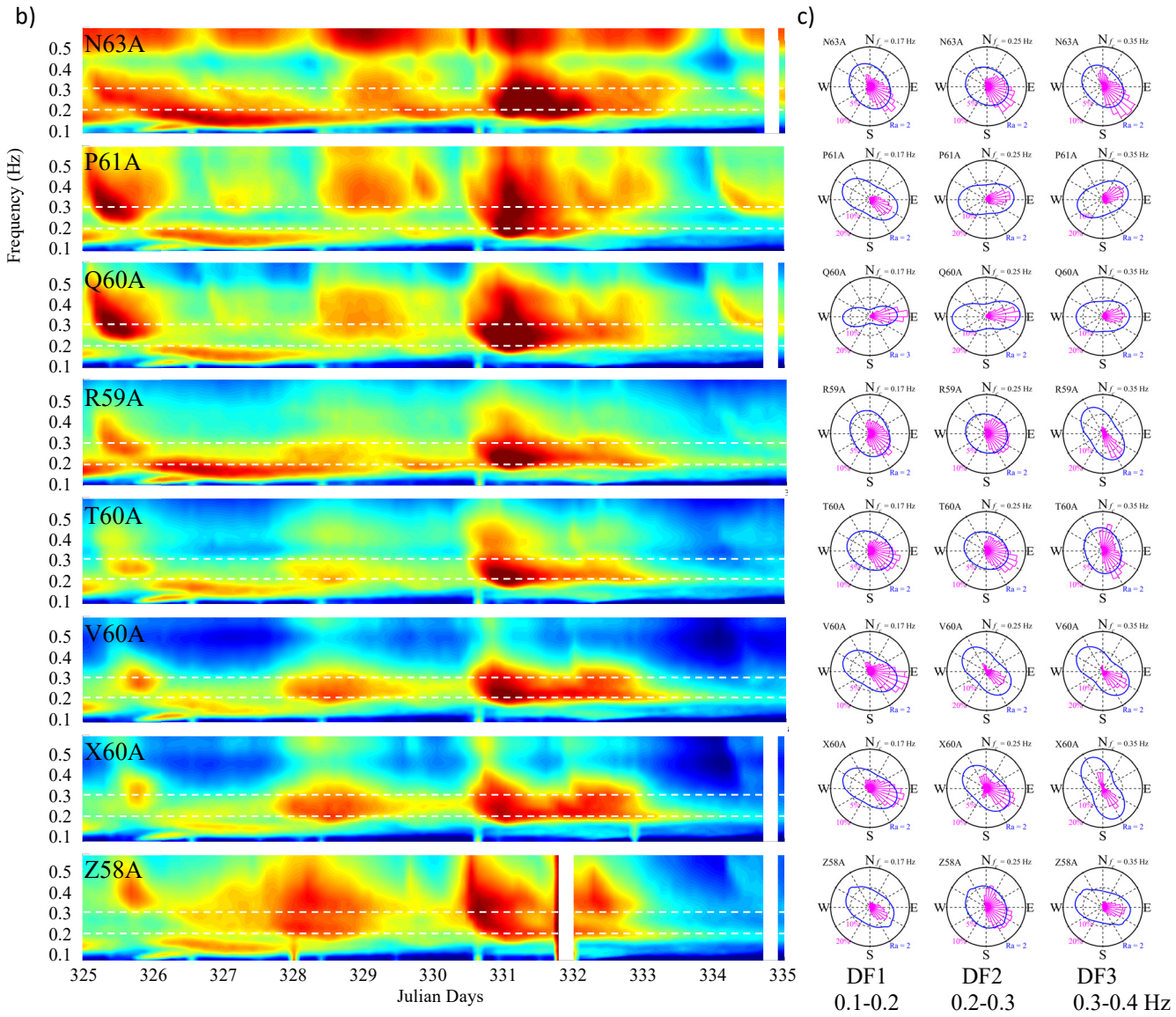
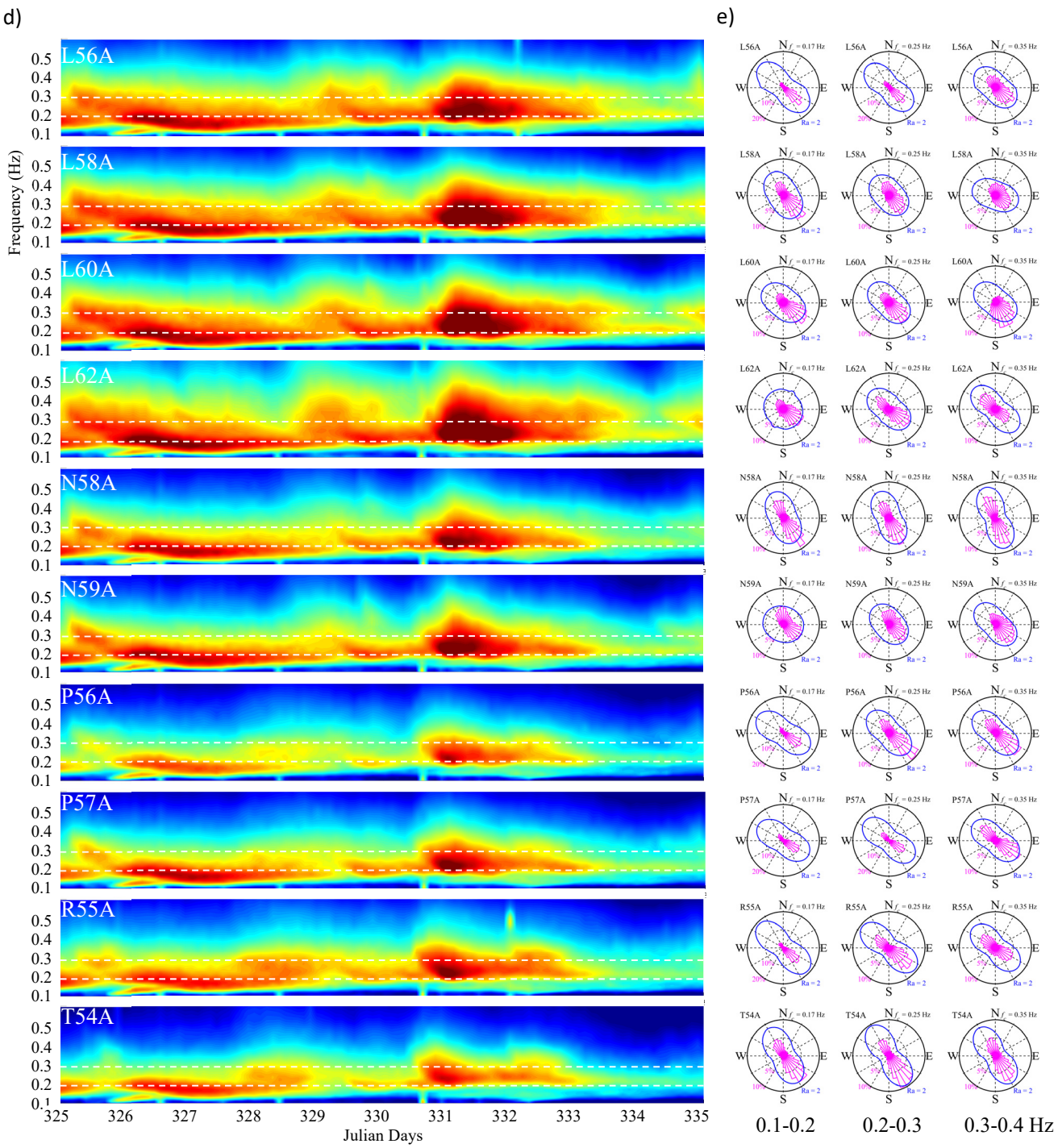
a)




b)
c)
Frequency (Hz)
N63A
P61A
Q60A
R59A
T60A
V60A
X60A
Z58A
0.1
0.2
0.3
0.4
0.5
325
326
327
328
329
330
331
332
333
334
335
Julian Days
DF1
0.1-0.2
DF2
0.2-0.3
DF3
0.3-0.4 Hz


d)
e)
L56A
L58A
L60A
L62A
N58A
N59A
P56A
P57A
R55A
T54A
Frequency (Hz)
0.5
0.4
0.3
0.2
0.1
325
326
327
328
329
330
331
332
333
334
335
Julian Days
N
W
E
S
0.1-0.2
0.2-0.3
0.3-0.4 Hz

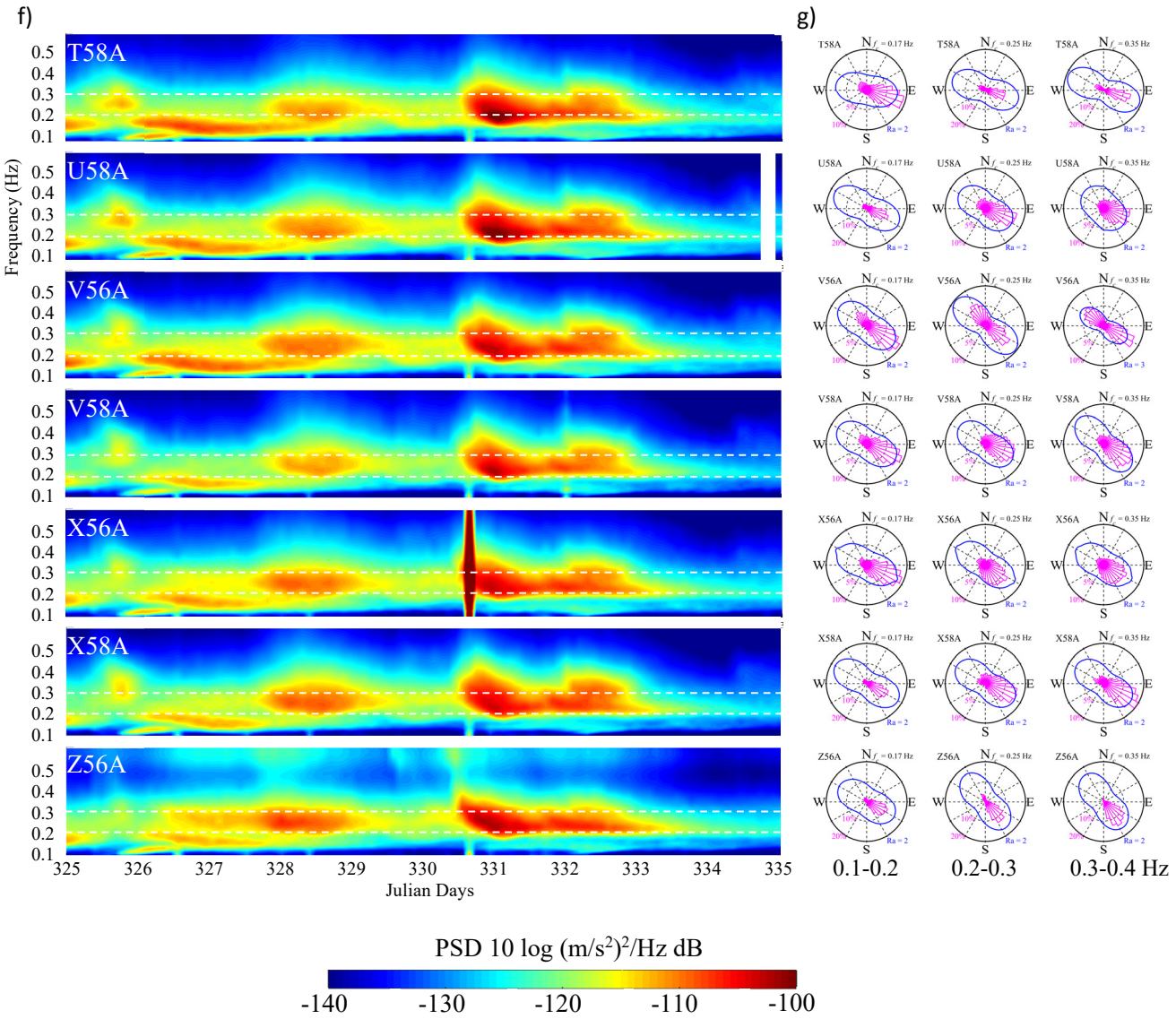


Figure S1. a) Map of the USarray transportable array stations and their groups. Vertical power spectral density (PSD) plots in time and frequency domain of b) coastal stations, d) Appalachian mountain stations, and f) south section stations. c), e) and g) Ra outlines and rose diagrams of polarized back azimuth in three DF bands of the stations in the three station groups.

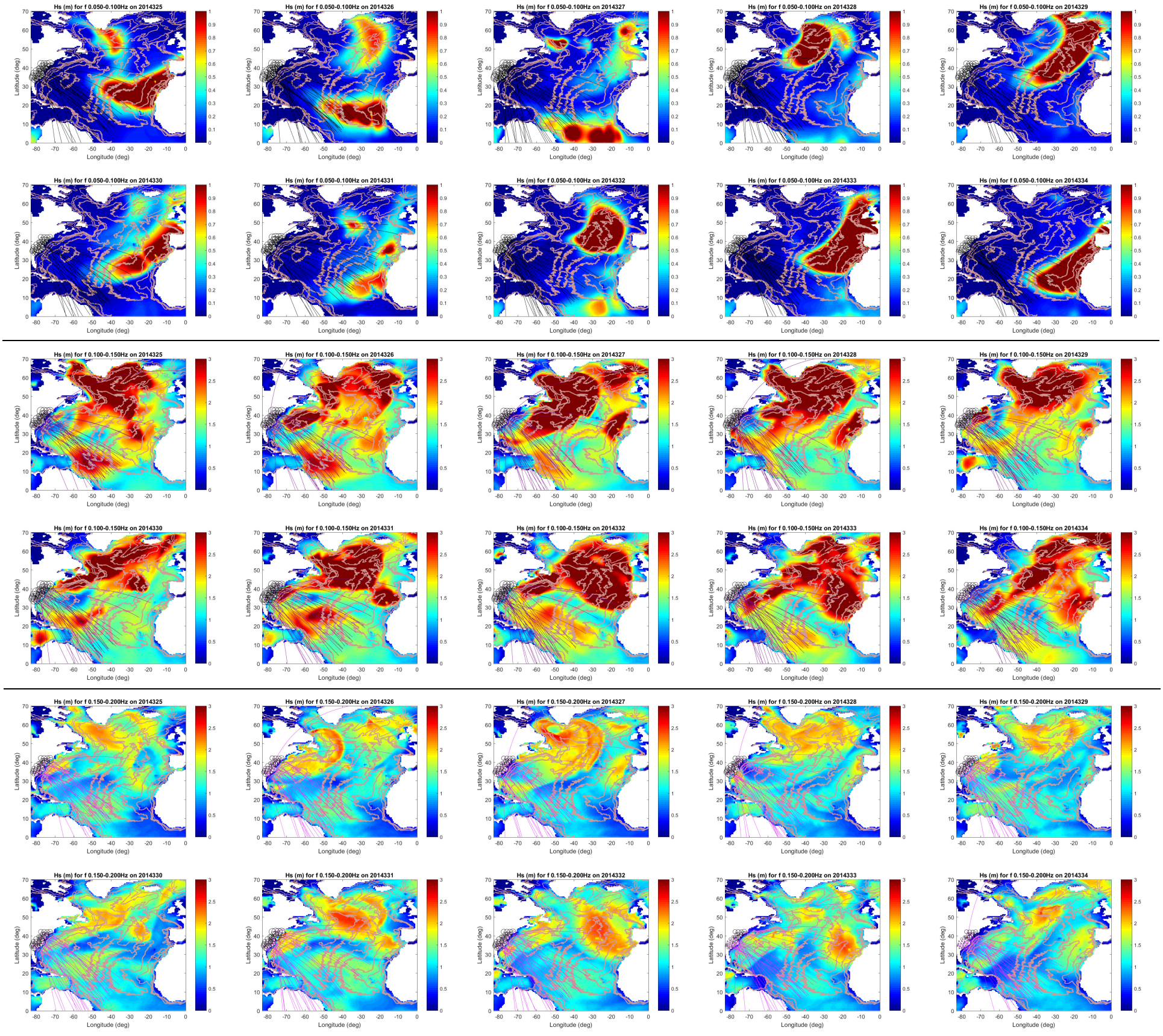


Figure S2. Daily WWIII hindcasts of spectral ocean wave height in Northern Atlantic Ocean (color gradient maps), and PSD levels (small circles with scaled sizes) and primary vibration directions (great circles) at all stations in the corresponding DF bands: DF1 in the top two rows, DF2 in the middle two rows, and DF3 in the bottom two rows. The frequency band of ocean wave (half of corresponding DF band) and day are labeled on top of each plot.

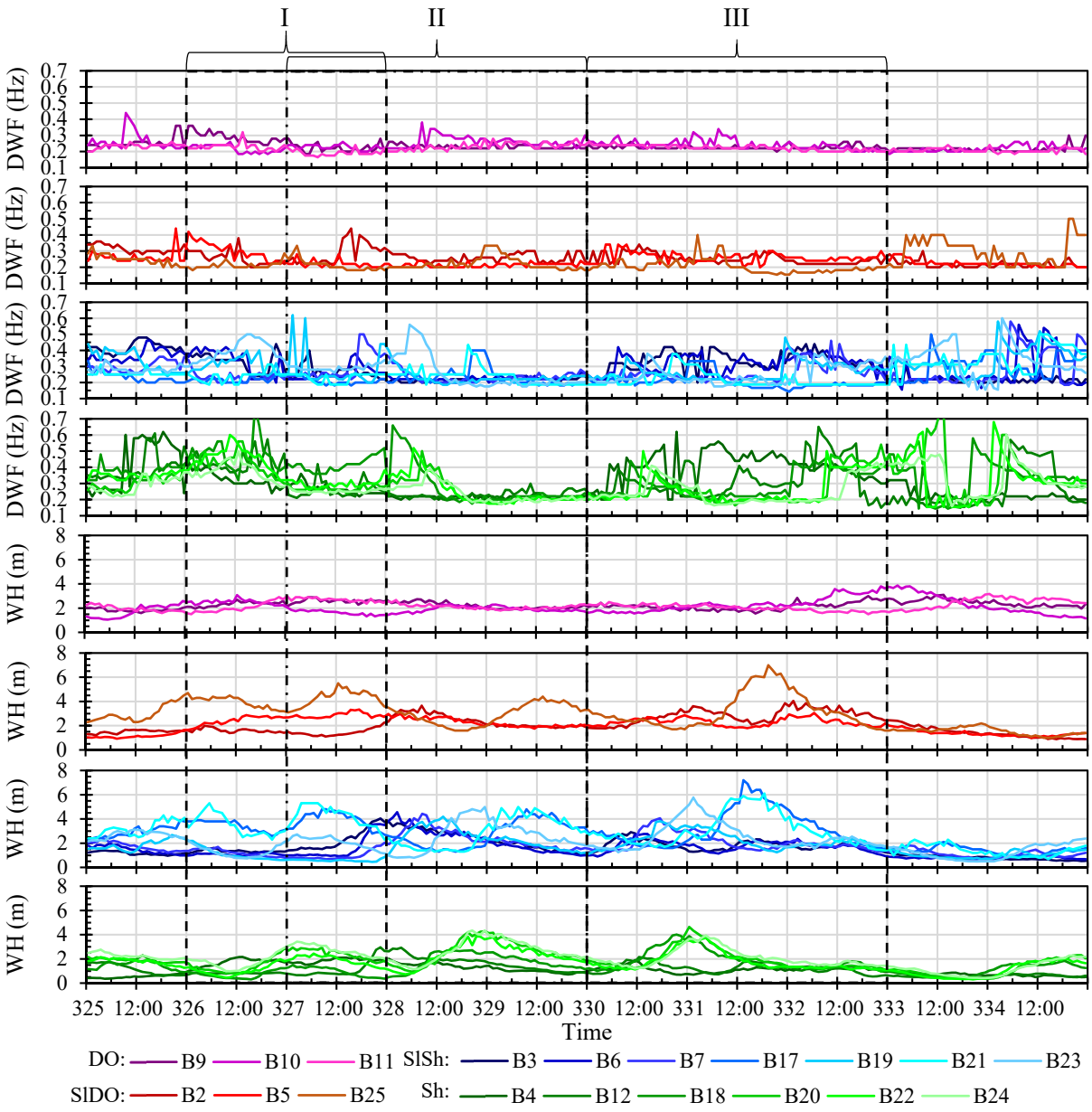


Figure S3. Time history of double dominant ocean ocean wave frequencies (DWF) and significant ocean wave heights (WH) at the ocean buoys grouped according to their locations, deep ocean (DO), the continental slope on deep ocean side (SlDO), the continental slope on shelf side (SlSh) and the continental shelf (Sh) (see Figure 1 for their locations and original names).

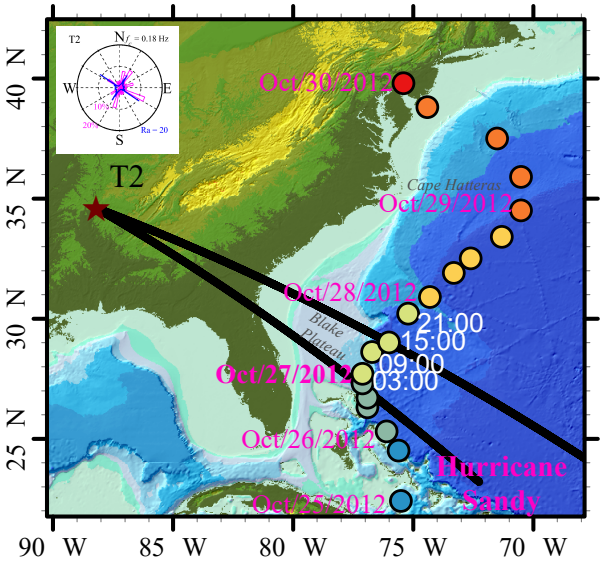


Figure S4. An example to verify the validity of great circle projecting to the sources of LPDF microseisms. The great circles at the station T2 on bedrock in Tishomingo, Mississippi project to the sources of DF microseisms induced by hurricane "Sandy" on 27 October 2012 successfully.