

1 Bacterioplankton metacommunity processes across thermal gradients: weaker species sorting but  
2 stronger niche segregation in summer than in winter subtropical bay

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15 Running Head: Bacterial metacommunity processes

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## SUPPLEMENTARY MATERIALS

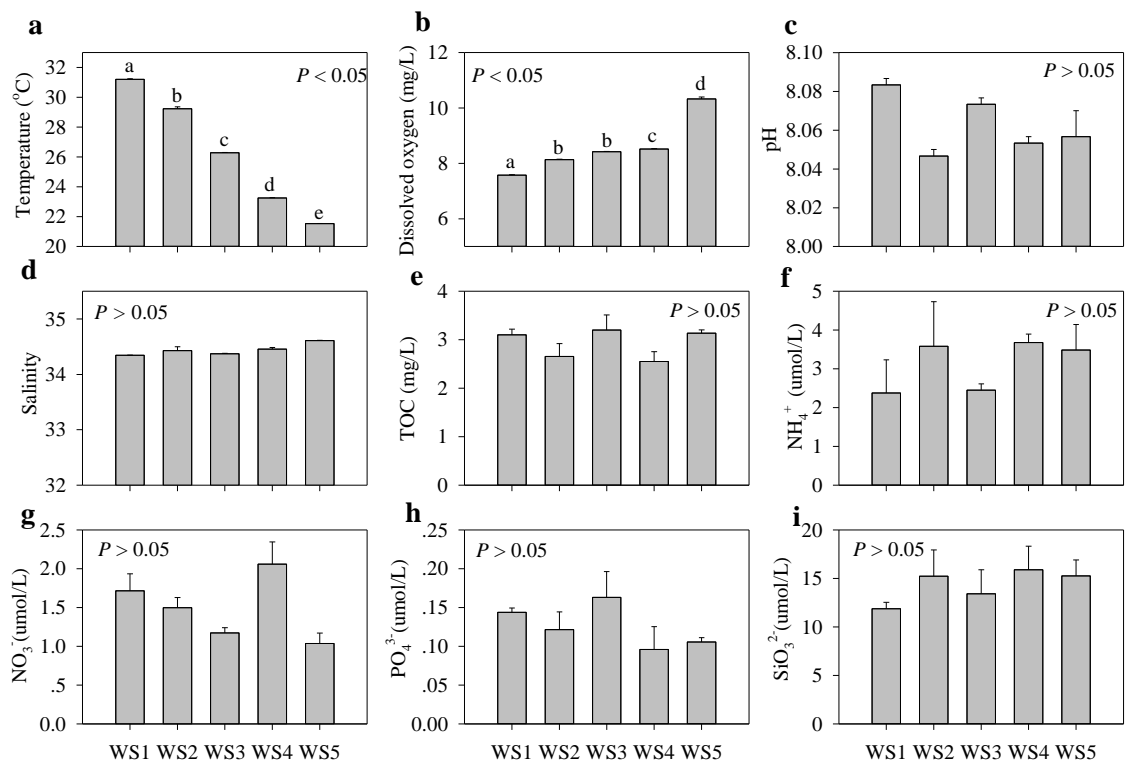
21 **Table S1** Significance tests of bacterioplankton community compositions (BCCs) across the  
 22 thermal gradients in winter and in summer seawater, respectively. Permutational multivariate  
 23 analysis of variance (PERMANOVA) based on Bray-Curtis dissimilarity matrices was used. Bold  
 24 values indicate the test results with a  $p < 0.05$ .

group	winter		summer	
	F	<i>p</i>	F	<i>p</i>
<b>Whole</b>	5.919	<b>0.001</b>	9.284	<b>0.001</b>
S1 vs S2	4.319	<b>0.001</b>	1.445	0.098
S1 vs S3	5.192	<b>0.001</b>	6.183	<b>0.024</b>
S1 vs S4	4.494	<b>0.001</b>	8.123	<b>0.008</b>
S1 vs S5	18.608	<b>0.007</b>	12.942	<b>0.032</b>
S2 vs S3	3.462	0.056	6.621	<b>0.012</b>
S2 vs S4	3.499	<b>0.038</b>	8.840	<b>0.001</b>
S2 vs S5	3.210	<b>0.036</b>	12.533	<b>0.001</b>
S3 vs S4	1.321	0.409	3.035	<b>0.001</b>
S3 vs S5	9.660	<b>0.001</b>	11.662	<b>0.001</b>
S4 vs S5	3.148	<b>0.001</b>	6.306	<b>0.021</b>

25 **Table S2** Co-presence and exclusion links of the bacterioplankton co-occurrence subnetworks in  
 26 winter and in summer seawater under thermal impacts.

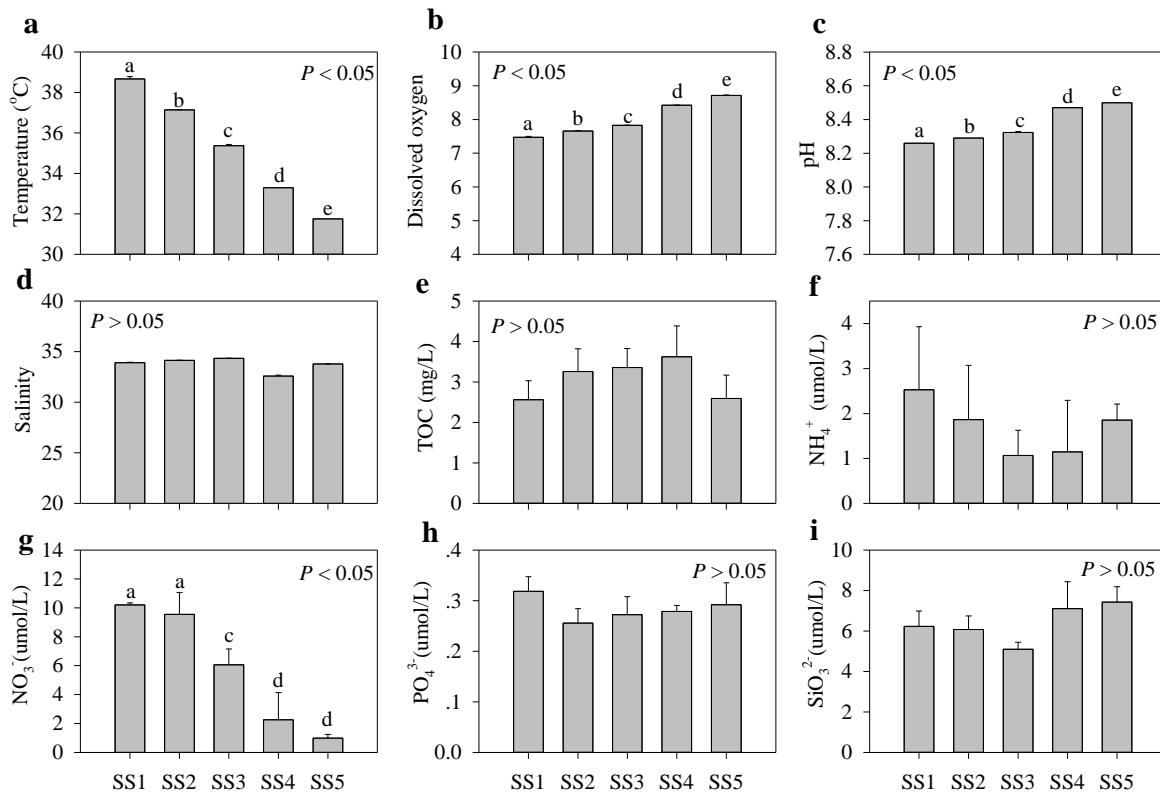
<b>Parameters</b>	<b>Winter subnetwork</b>	<b>Summer subnetwork</b>
Co-presence links between temperature related and unrelated nodes	<b>719</b>	<b>593</b>
Exclusion links between temperature related and unrelated nodes	<b>188</b>	<b>323</b>
Exclusion links /total links between temperature related and unrelated nodes	<b>0.21</b>	<b>0.35</b>
Co-presence links between temperature unrelated nodes	<b>507</b>	<b>207</b>
Exclusion links between temperature unrelated nodes	<b>173</b>	<b>323</b>
Exclusion links /total links between temperature unrelated nodes	<b>0.26</b>	<b>0.61</b>

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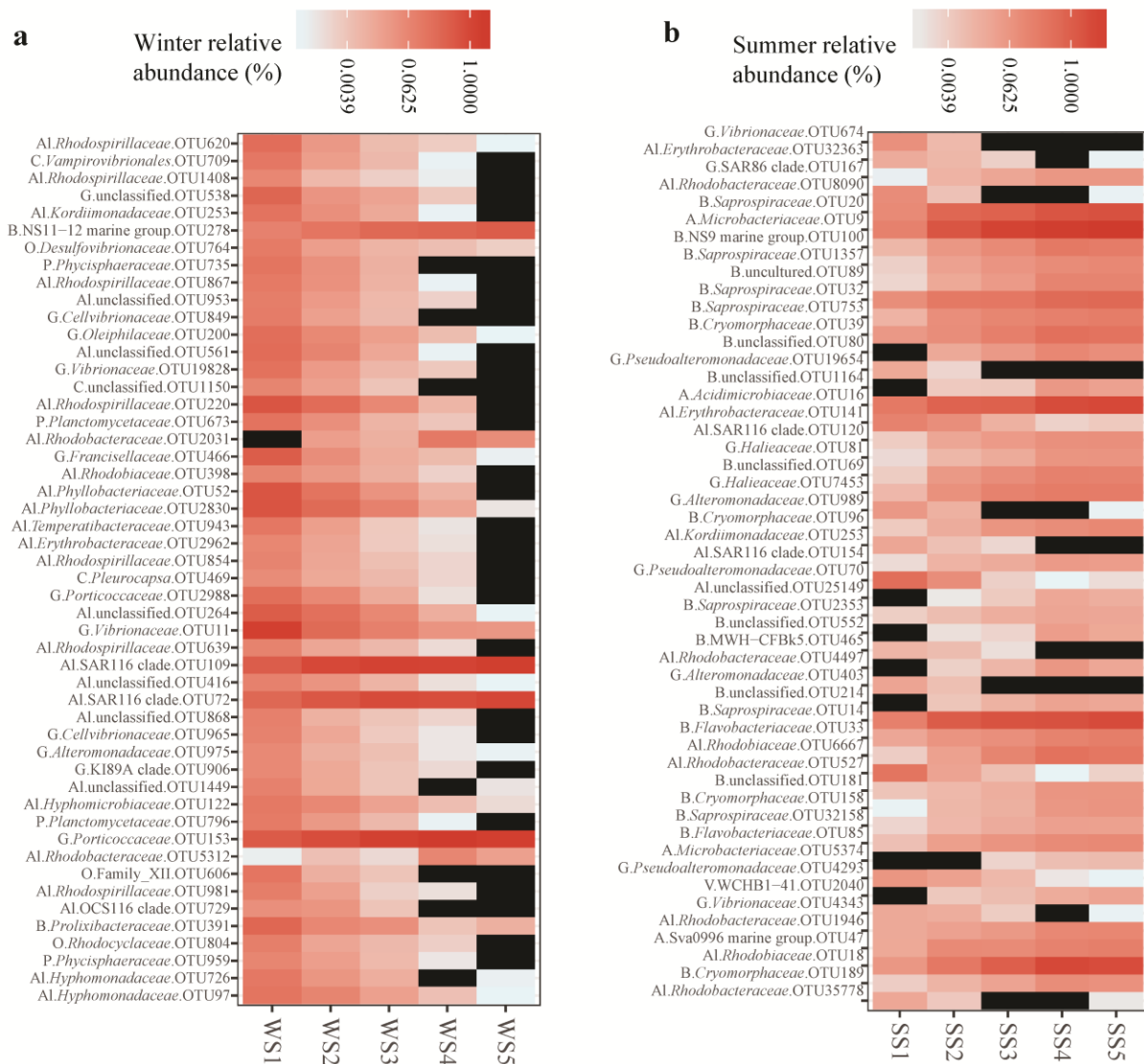
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29 **Fig. S1** Environmental characteristics across the thermal gradient in winter seawater.



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31 **Fig. S2** Environmental characteristics across the thermal gradient in summer seawater.



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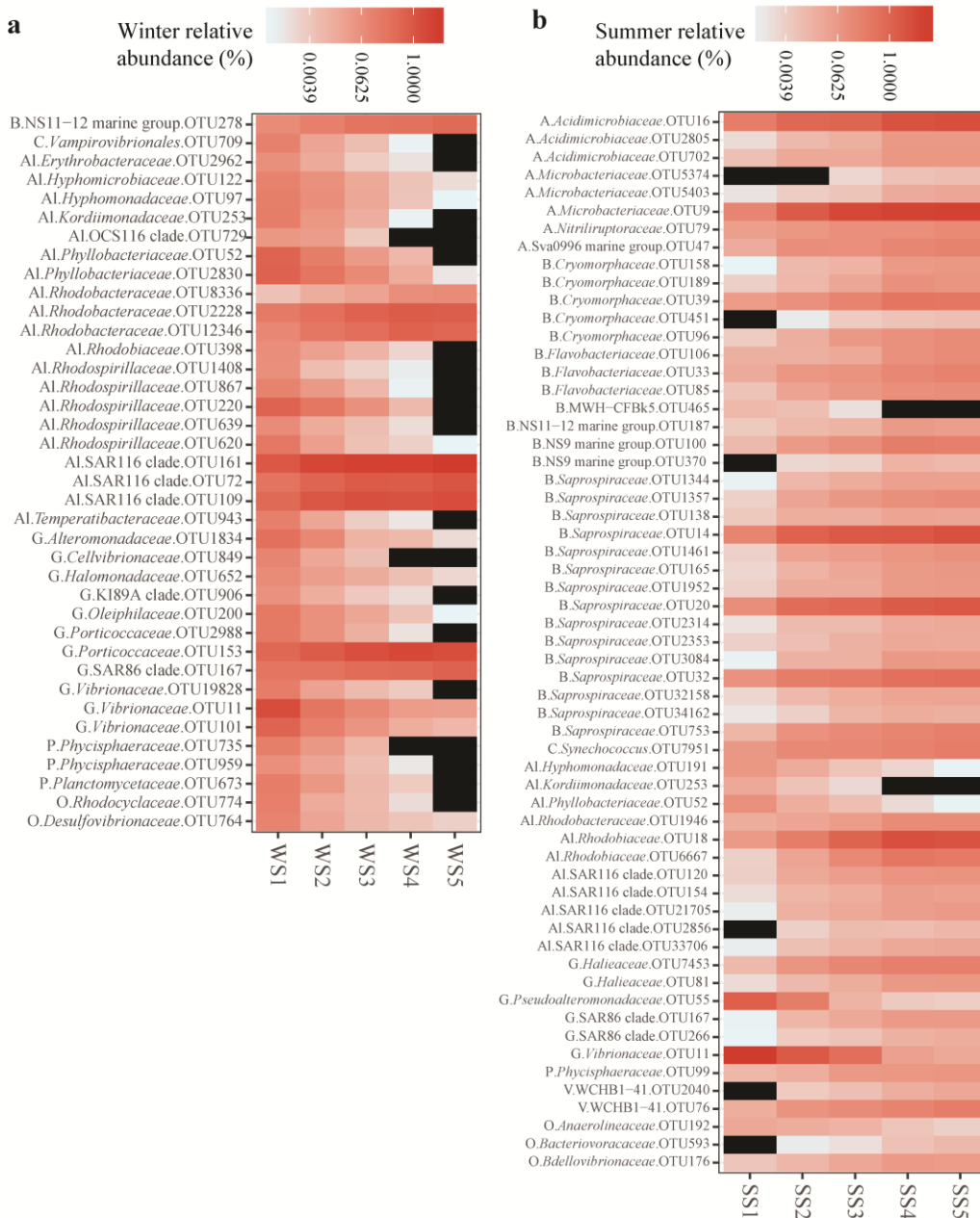
33 **Fig. S3** Heatmap depicts the thermal impacts on the distributions of top 50 keystone OTUs in

34 winter (a) and in summer (b) co-occurrence networks. A refers *Actinobacteria*, B refers

35 *Bacteroidetes*, C refers *Cyanobacteria*, Al refers *Alphaproteobacteria*, G refers

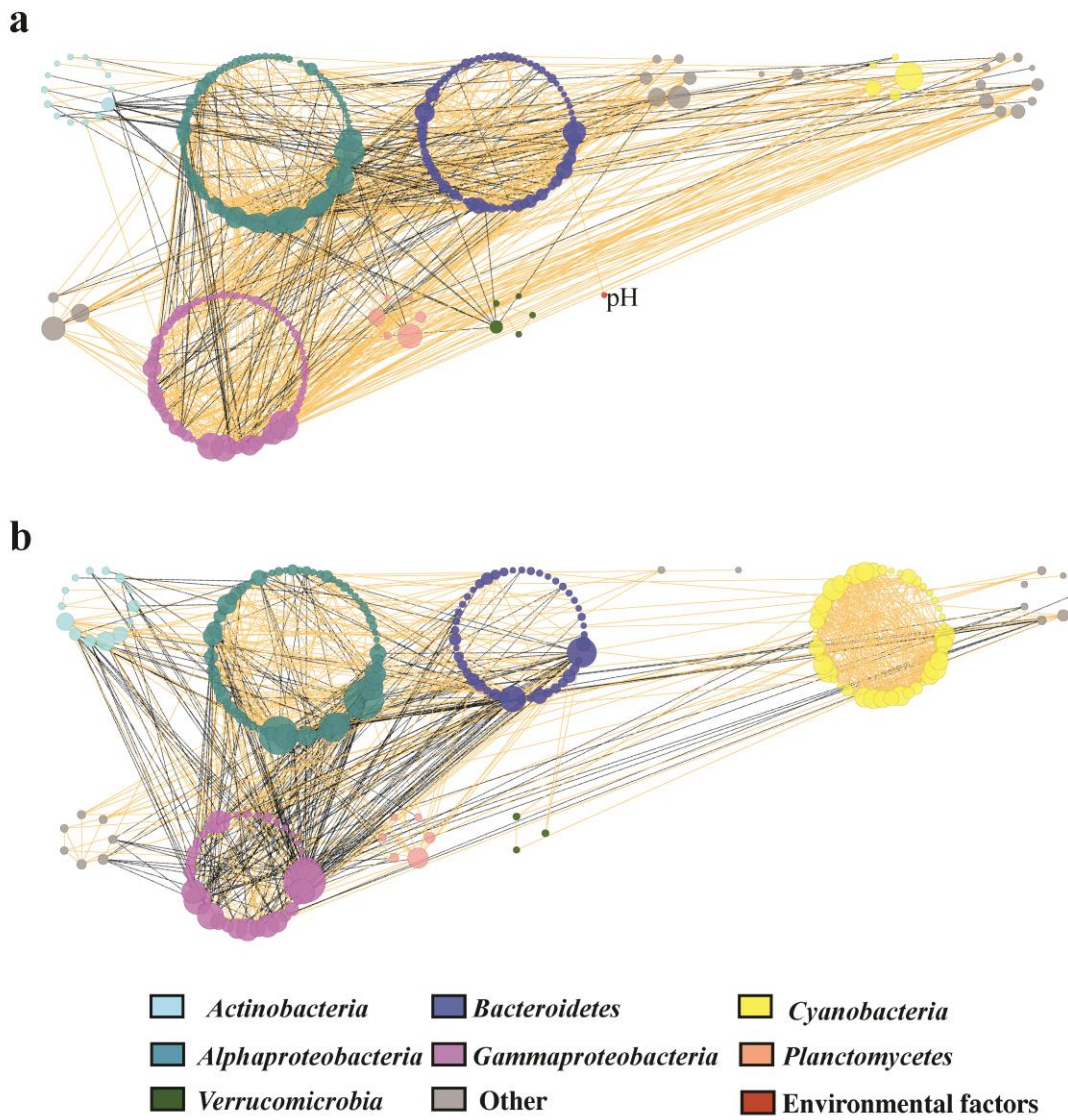
36 *Gammaproteobacteria*, P refers *Planctomycetes*, V refers *Verrucomicrobia* and O refers other rare

37 phyla with the relative abundance of the total sequences < 1%.



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39 **Fig. S4** Heatmap depicts the distributions of OTUs (nodes) that have significant correlations with  
 40 temperature in winter (a) and in summer (b) seawater. A refers *Actinobacteria*, B refers  
 41 *Bacteroidetes*, C refers *Cyanobacteria*, Al refers *Alphaproteobacteria*, G refers  
 42 *Gammaproteobacteria*, P refers *Planctomycetes*, V refers *Verrucomicrobia* and O refers other rare  
 43 phyla with the relative abundance of the total sequences < 1%.



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45 **Fig. S5** The subnetworks of OTUs that have non-significantly correlations with temperature in  
 46 both winter (a) and summer seawater (b) under thermal impacts. The networks are visualized  
 47 with group attribute layouts based on phylum or subphylum. Colors of the nodes indicate  
 48 different phylum or subphylum OTUs. The orange line indicates a positive interaction between  
 49 two OTUs (nodes), while the black line indicates a negative interaction.