Supplemental Material

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Dynamics of the Baroclinic Rossby Waves Regulating the abyssal South China Sea

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FIG. S1 Mean potential density profile estimated over 15° to 18° N and 116° to 119° E based on hydrographic data. The stars denote the mean potential density observed by CTDs deployed in D2 and D5.
FIG. S2 Hourly time series of $v$ (left) and $u$ (right) time series observed at 2000m, 2500m, 3000m, 3500m and HAB-120m of the D1 (panel a-e indicating $v$ and panel f-j indicating $u$).

The black lines indicate the daily mean time series.
FIG. S3 Hourly time series of $v$ (left) and $u$ (right) time series observed at 1000m, 2000m, 2500m, 3500m and HAB-120m of the D2 (panel a-e indicating $v$ and panel f-j indicating $u$).

The black lines indicate the daily mean time series.
FIG. S4 Hourly time series of $v$ (left) and $u$ (right) time series observed at 2000m, 2500m, 3000m, 3500m and HAB-120m of the D3 (panel a-e indicating $v$ and panel f-j indicating $u$). The black lines indicate the daily mean time series.
FIG. S5 Hourly time series of $v$ (left) and $u$ (right) time series observed at 2000m, 2500m, 3500m and HAB-120m of the D4 (panel a-d indicating $v$ and panel e-h indicating $u$). The black lines indicate the daily mean time series.
FIG. S6 Hourly time series of $v$ (left) and $u$ (right) time series observed at 1000m, 2000m, 2500m, 3000m, 3500m and HAB-120m of the D5 (panel a-f indicating $v$ and panel g-l indicating $u$). The black lines indicate the daily mean time series.
FIG. S7 Hourly time series of $v$ (left) and $u$ (right) time series observed at 2000m, 2500m and HAB-120m of the D6 (panel a-c indicating $v$ and panel d-f indicating $u$). The black lines indicate the daily mean time series.
FIG. S8 Hourly time series of $v$ (left) and $u$ (right) time series observed at 2000m, 2500m, 3000m, 3500m and HAB-120m of the D7 (panel a-e indicating $v$ and panel f-j indicating $u$).

The black lines indicate the daily mean time series.
FIG. S9 Band-passed $v$ time series with window of 70-110 days at D1-D7 (panel a-f) with different color indicating the observation at different depths.
FIG. S10 Hovmöller diagram of $v_2$ (cm s$^{-1}$) derived from EXP3 along mooring section mentioned by Zhou et al. (2017).