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## Radiation of multi-source and multi-band internal waves in the northwestern Pacific

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The northwestern Pacific is the most energetic area of internal waves in the world ocean. Generation and evolution processes of multi-source and multi-band internal waves at tidal frequency are examined by driving high-resolution numerical model. The semidiurnal and diurnal internal waves exhibit distinct-different generation and radiation patterns. The multi-source distribution of internal waves favours the occurrence of complex interference patterns which contribute significantly to the inhomogeneous internal wave field. The improved ideal line-source model can well reproduce the interference processes of both semidiurnal and diurnal internal waves. Simulation results show that geostrophic circulations such as Kuroshio Current, North Equator Current, influence both semidiurnal and diurnal internal waves' radiation path. And this modulation process is further demonstrated by theoretical model. Energetic dissipation occurs both near the sources and in the basin. A locally dissipated fraction  $q \leq 0.4$  is estimated at the generation sites with continuous bathymetry features, while  $q \geq 0.6$  is estimated at areas with discrete topographic variability. A lower locally dissipated fraction indicates a higher proportion of internal wave energy radiating into the basin, where enhanced dissipation coincides closely with the interference-modulated flux field.