



## **Seasonal variability of temperature, salinity, and geostrophic currents obtained from CTD and satellite observations around South Korea**

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The annual variability of temperature, salinity, and geostrophic circulation around South Korea (East/Japan Sea, southern coast, and Yellow Sea) is studied by analyzing conductivity-temperature-depth (CTD) profiles for recent 10 years (2001 to 2010). In the estimates of seasonal amplitudes using harmonic analysis, we examine their accuracy by evaluating how well the seasonal fit reconstructs the known pure seasonal signals with noise. Over the shelf (within 70km of the coast) in the East Sea, the seasonal amplitudes, means, and root-mean-squares of subsurface temperature and salinity are smaller than those offshore about 20-50%, which may be due to southward North Korea cold currents along the shelf nearly all year. Conversely, in the Yellow Sea, the seasonal amplitudes of subsurface temperature onshore waters (within 40 km) become larger than offshore about 40% as a result of enhanced onshore tidal mixing.