Wavelike features observed in the upper thermocline during the DYNAMO IOP.

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Ocean currents observed from the R/V Revelle during legs 2 and 3 reveal several distinct wavelike features with time scales of weeks to months. In the depth range 300-600m, zonal and meridional velocities contain upward-propagating oscillations. These show no apparent correlation and are therefore interpreted provisionally as equatorially-trapped of odd and even order, respectively. The zonal waves have a vertical phase velocity of 6-7m/day, and period in excess of 110 days – longer than the MJO period but consistent with the semiannual period of the Wyrtki Jet. They carry a negative zonal momentum flux (i.e. downward from the equatorial undercurrent) that is comparable to the turbulent flux between the Wyrtki Jet and the undercurrent. Through most of October, the meridional velocity showed sheared layers with no vertical propagation. Beginning in late October, vertically-propagating signals appeared with period near 20 days and vertical phase velocity near 10m/day. Nearer the surface were several strongly sheared features whose relationship to the deeper waves remains undetermined but which are likely to affect upper-ocean mixing.