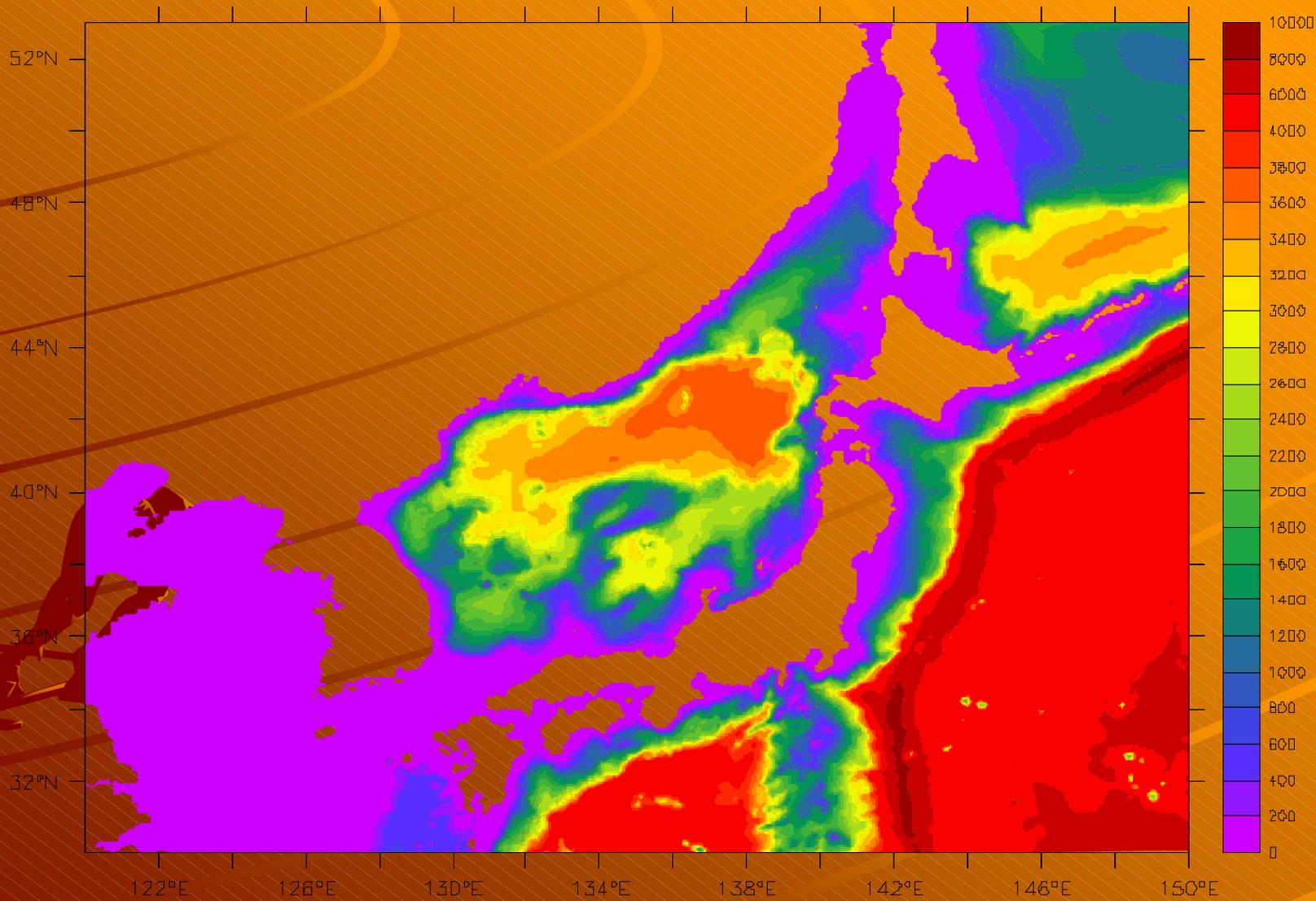


Intermediate level circulation in the southwestern part of the Japan/East Sea from subsurface floats



Young-Gyu Park, Kyung-Hee Oh,
Moon-Sik Suk, Kyung-Il Chang

Korea Ocean Research &
Development Institute



Introduction

- ✦ Intermediate level circulation in the southwestern part of JES
 - Very weak stratification
 - ✦ Circulation from hydrography: hard
 - Sparse current meter mooring
 - ✦ Chang et al. (2002), Teague et al. (2003)
 - Complicated bottom topography



39.5°N

38.5°N

37.5°N

36.5°N

35.5°N

34.5°N

126.0°E

128.0°E

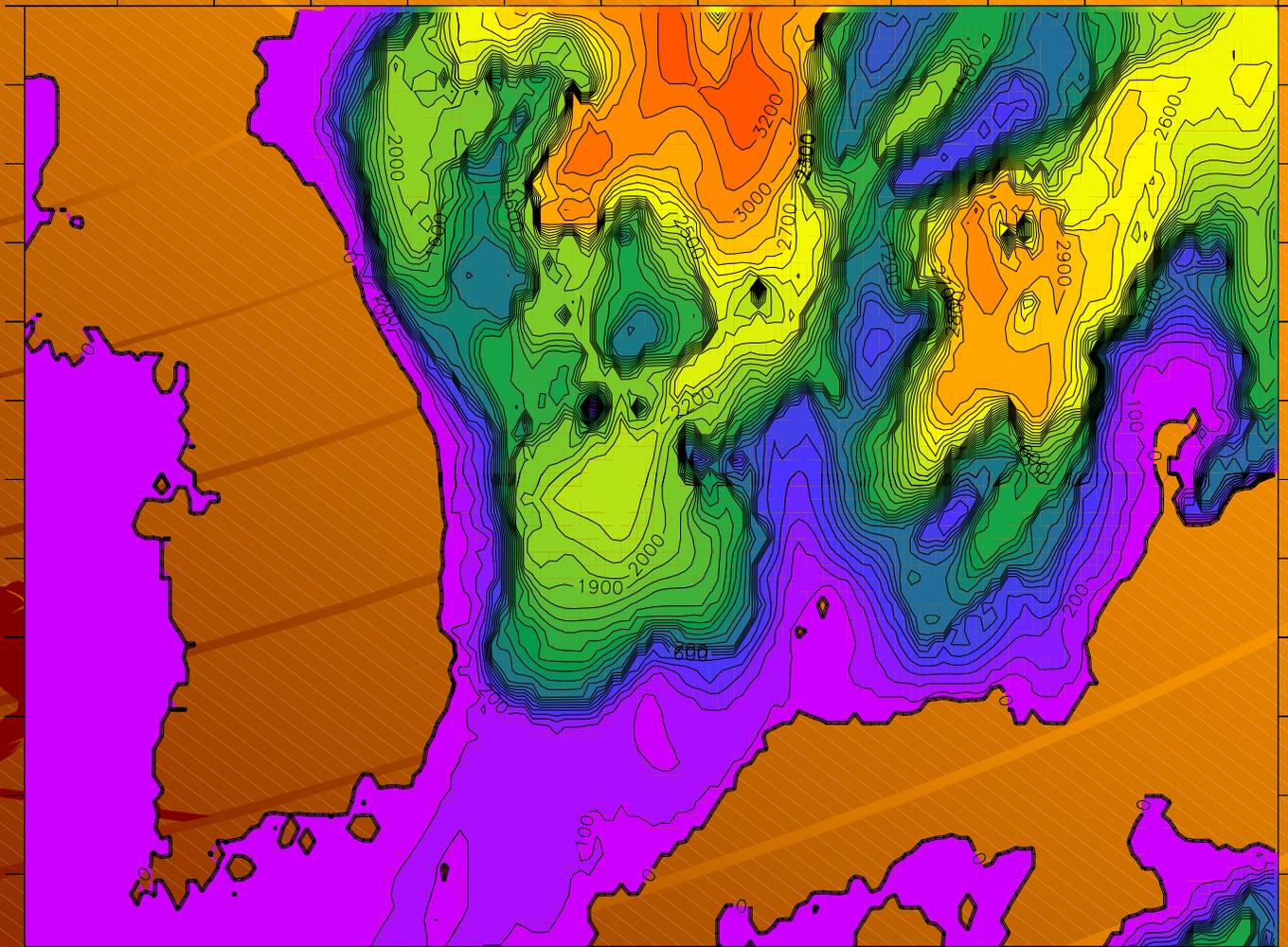
130.0°E

132.0°E

134.0°E

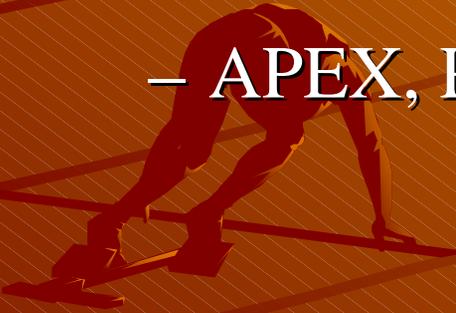
136.0°E

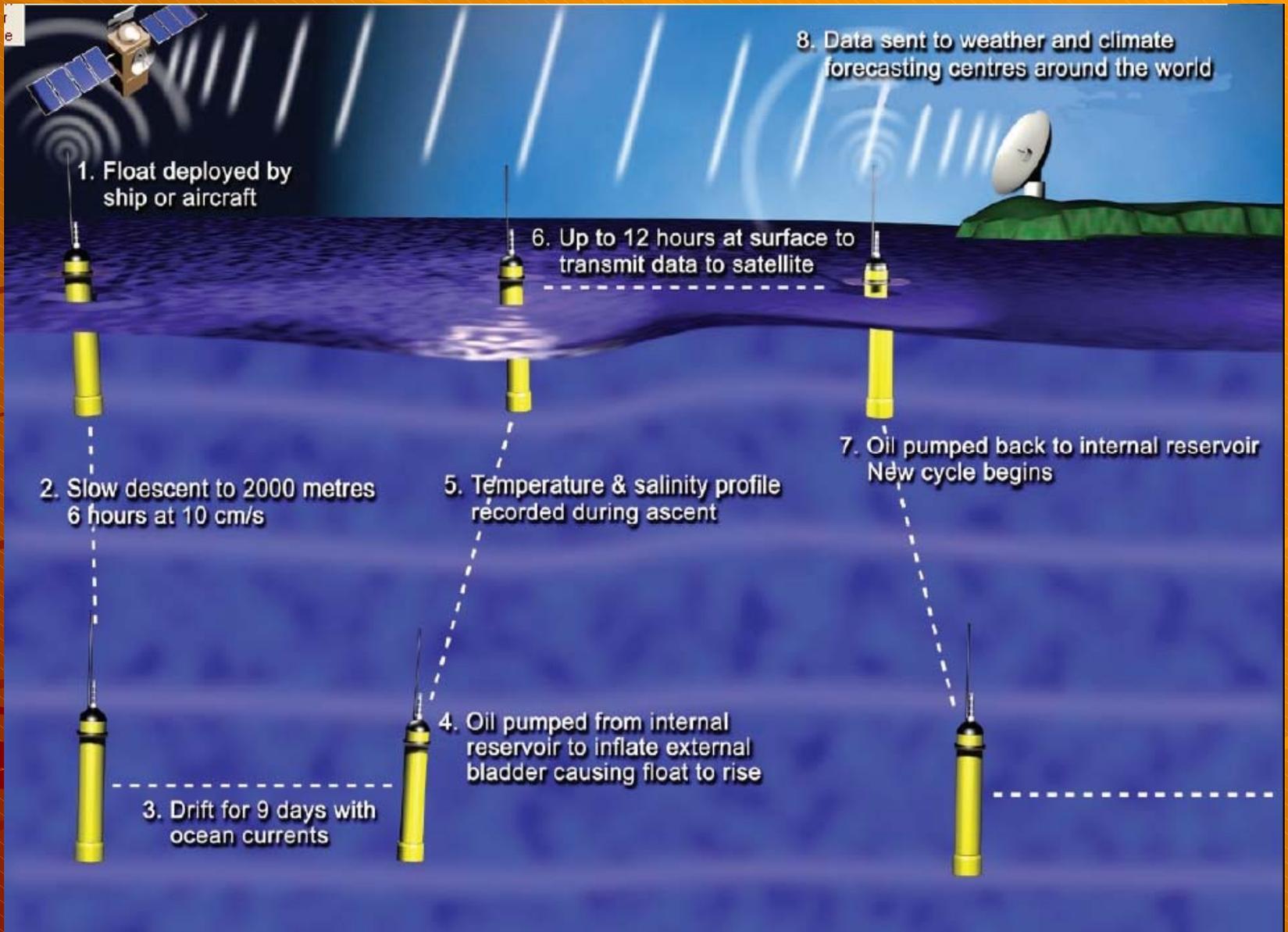
138.0°E



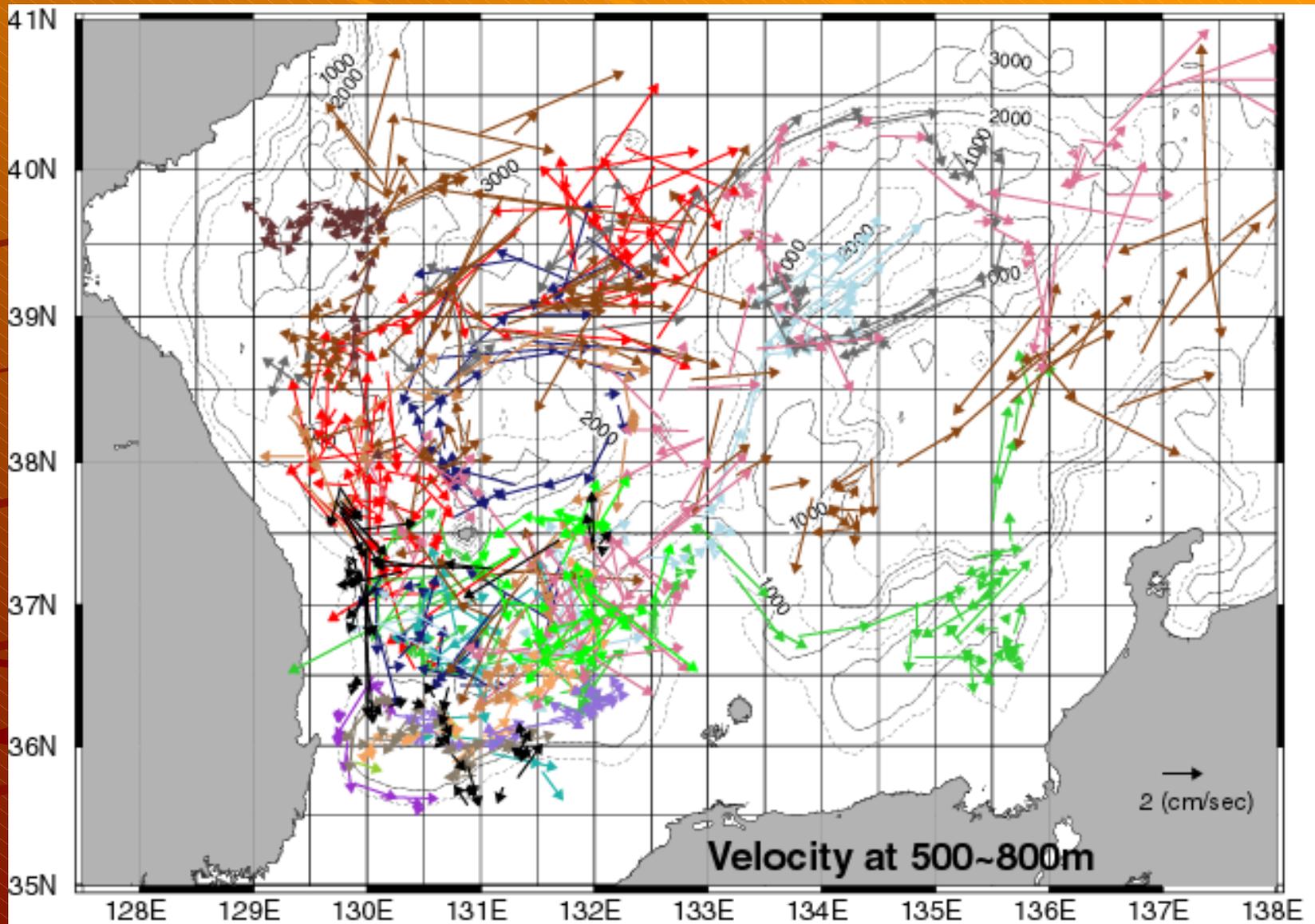
Goal

- ✦ Intermediate level circulation from autonomous drifters
 - Drifting depth: 500m, 700m and 800m
 - 1998-2003: KORDI and METRI
 - APEX, PALACE



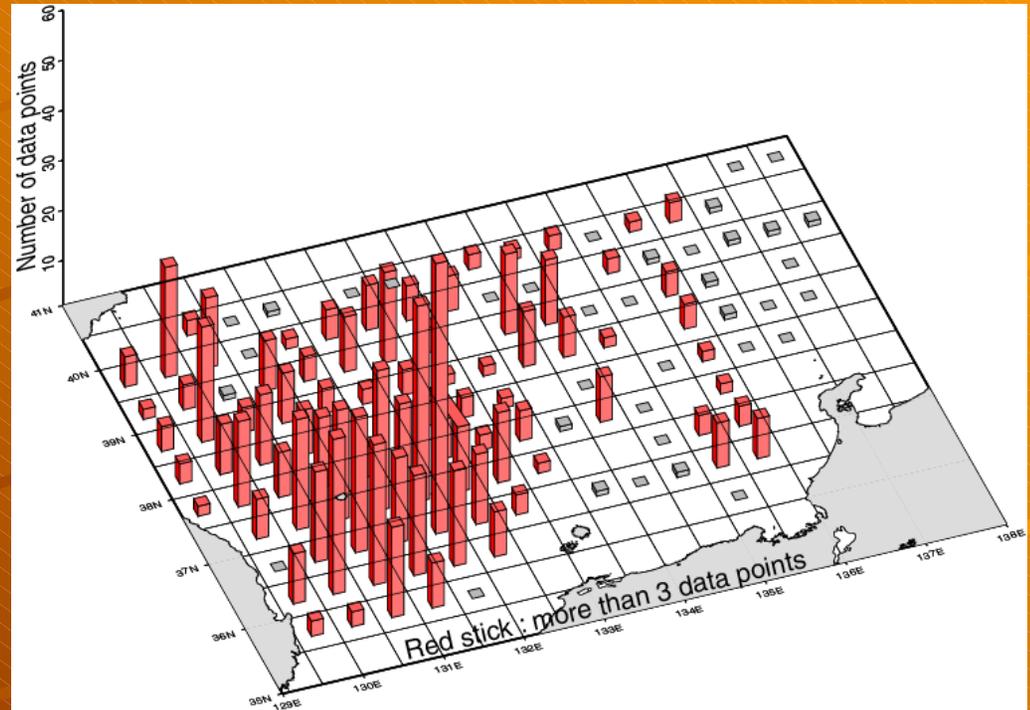


From SOC



Method

- ✦ Divide the area into bins of $0.5^\circ \times 0.5^\circ$
- ✦ Average over each bin



Errors

✦ Uncertainty in fix

- Drift at the surface

 - ✦ Lags between actual surfacing & descending times and the fix

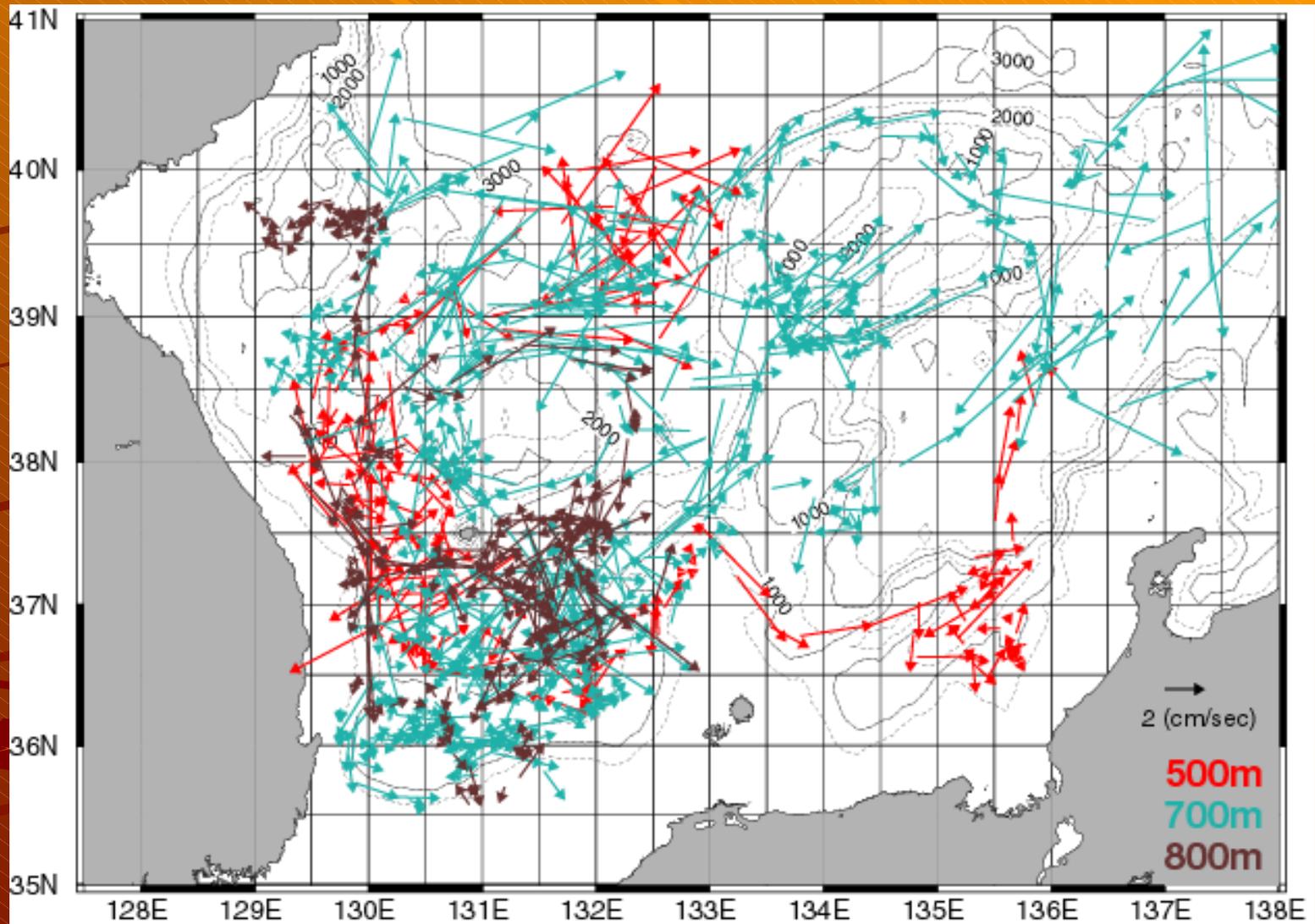
- Drifts during descending and ascending

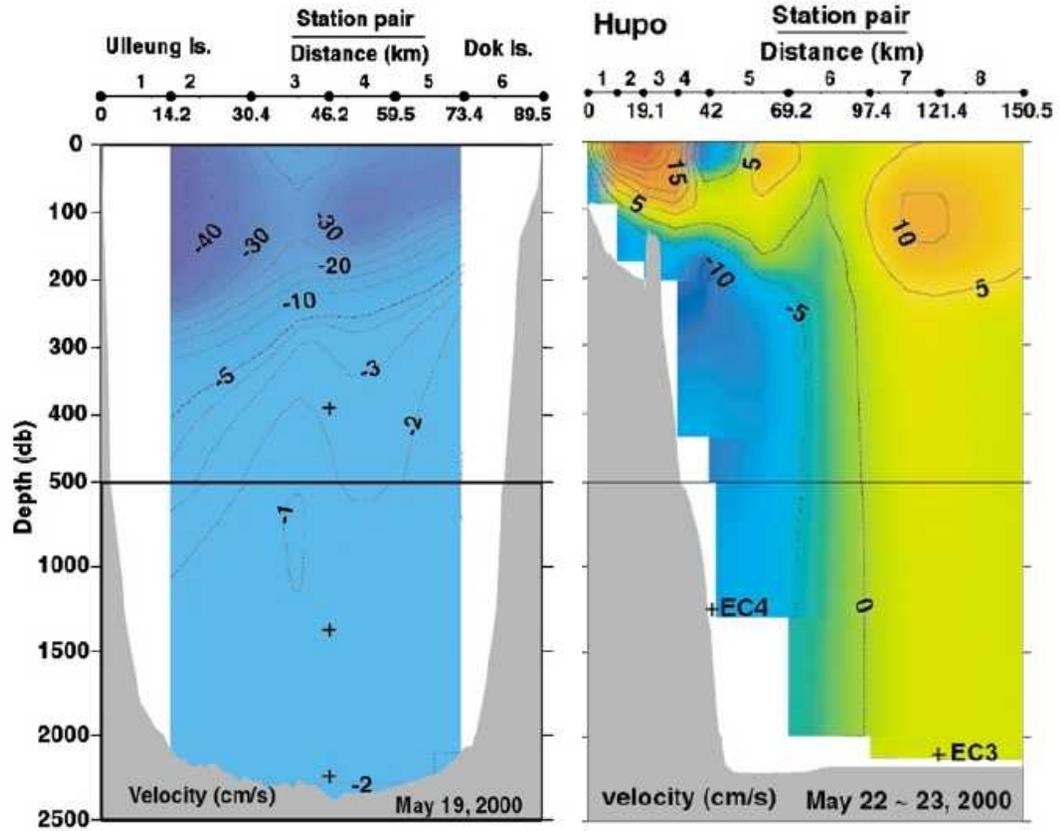
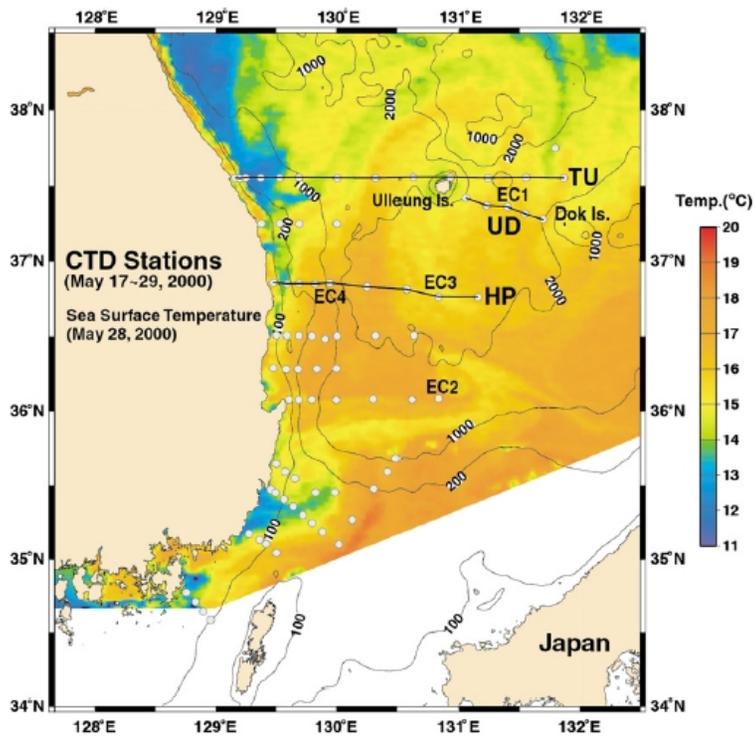
✦ Vertical shear

- Drifting depth of floats: 500m, 700m, 800m

- Correction based on geostrophic calculation (Lavender et al, 2000)

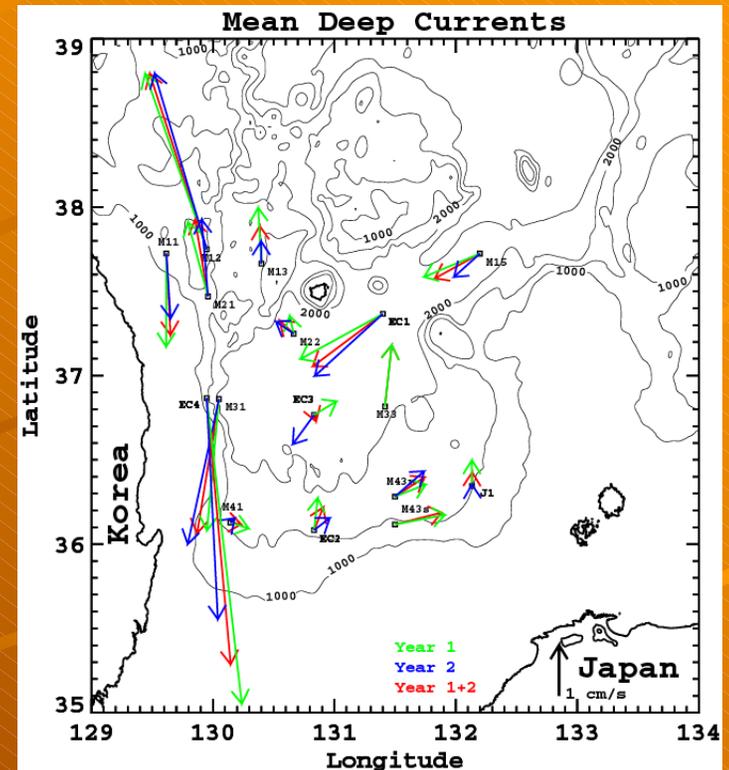
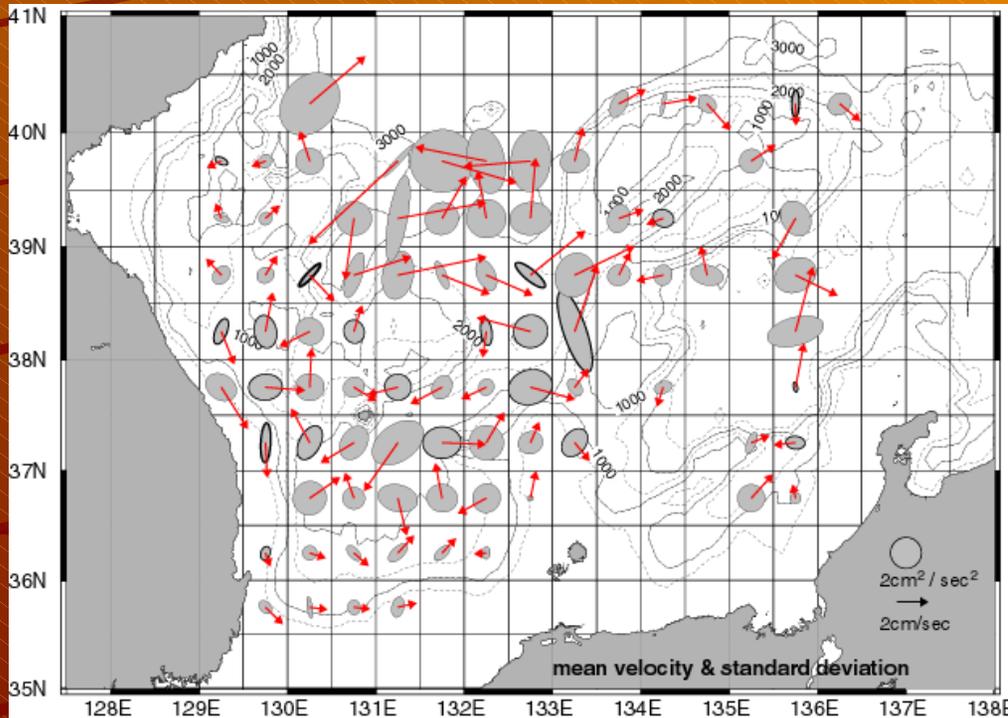
 - ✦ In JES the vertical shear is small





Chang et al 2002

Verify the results by comparing with current meter mooring



Teague et al

Conclusions and Summaries

- ✦ Cyclonic boundary current along Korean and Japanese coasts
 - Relation to near shore branch of Tsushima current?
 - Narrow along Korean coast but wide along the Japanese coast.
- ✦ Anticyclonic current over Korean Plateau
 - Taylor column?
- ✦ High variability in the Ulleung basin.
- ✦ Topography controls the flow.