

The 50 (150) dominant left singular vectors are found to explain 55% (84%) of the variability variance explained by the 289 vectors. Figs. 9–11 illustrate a few of these vectors. In passing, they did not vary significantly with the open-boundary conditions chosen (Section 2.2).

Fig. 9 shows the two dominant vectors of PE variability for Sept. 15. Panels 1a–2a are horizontal maps of  $\psi$ , surface  $T$ ,  $S$  and  $\hat{u}$ . Panels 1b–2b are vertical cross-sections of  $T$ ,  $S$ ,  $\hat{u}$  and  $\hat{v}$  along the axis 17E of large amplitudes. The first two vectors are almost in quadrature of phase in the horizontal and are associated with baroclinic/barotropic

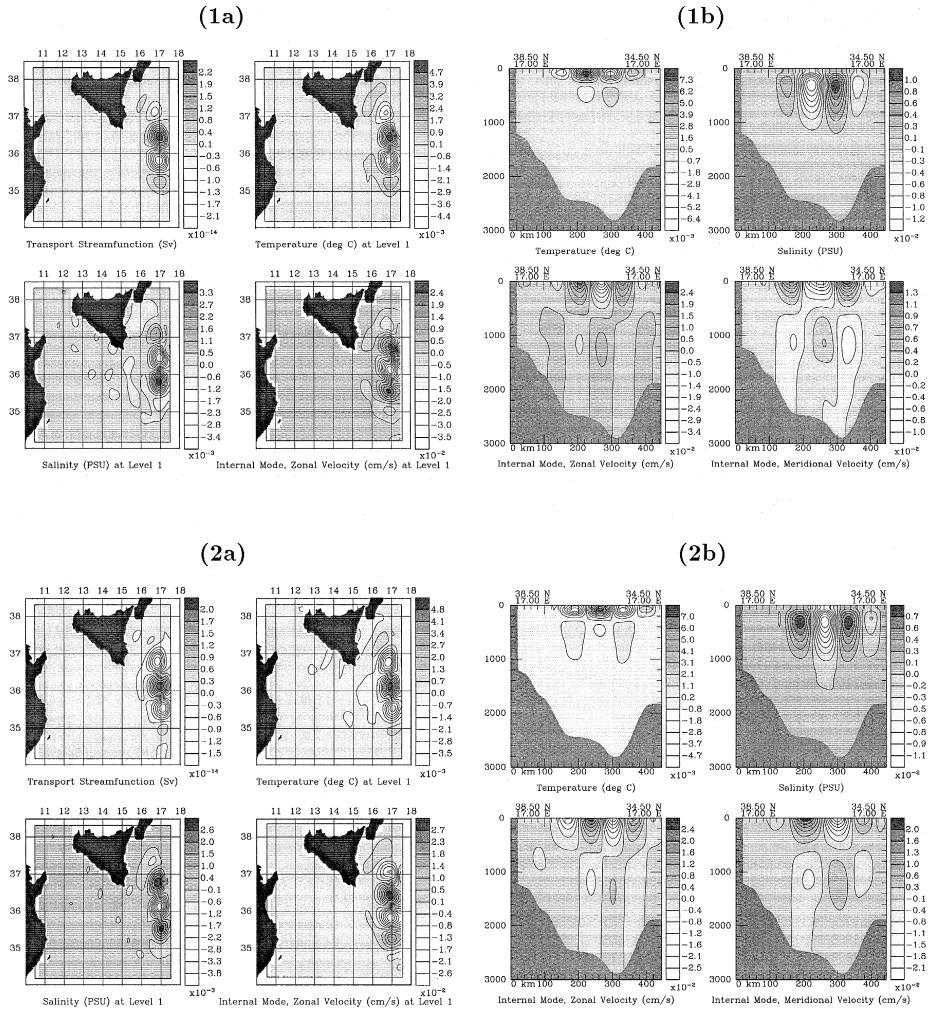


Fig. 9. Multivariate eigenvectors of the normalized, PE adjusted, initial (Sept. 15) error covariance estimate. The vectors illustrated are the two dominant modes of the estimated PE variability for Sep. 15. The covariance is  $[299,052 \times 299,052]$ . The Panel numbers indicate vector numbers, with index  $a$  for the first level, and  $b$  for a vertical cross-section along 17E.