



Fig. 8. Mean vertical profiles of nitrate + nitrite, total chlorophyll *a* and oxygen concentration for *Opal*'s core region (IN_{avg}) and the far-field (OUT_{avg}). The lines at the sides of each profile indicate the 1 standard deviation interval. The IN_{avg} profile of chlorophyll *a* shows high variability due to variations in depth and intensity of the DCML. Nutrient profiles were reconstructed from water samples.

plotted against density (Fig. 8B). OUT_{avg} nutrient concentrations start to increase below the $\sigma-t_{23.7}$ density level, whereas the IN_{avg} profile shows low nitrate + nitrite concentrations extending below the $\sigma-t_{24}$ level. These limiting nutrient concentrations above the $\sigma-t_{24}$ surface most likely explain the IN_{avg} DCML

occurring at higher density levels than the OUT_{avg} DCML (Fig. 8D). Nitrate + nitrite concentrations at the $\sigma-t_{24.5}$ level are similar for both IN_{avg} and OUT_{avg} profiles. However, the gradient from these concentrations toward the minimum nutrient concentrations occurring in the near surface waters is much steeper for the