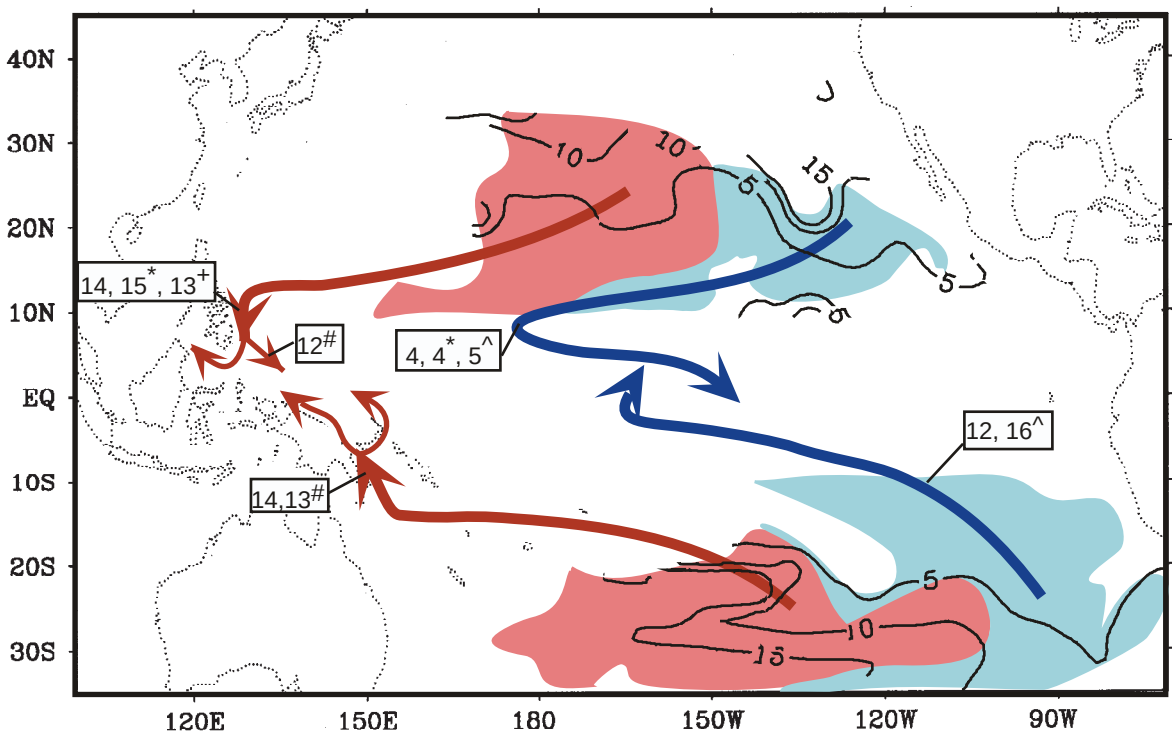

Figure 1. Western boundary exchange windows (red) and interior exchange windows (blue) in the Pacific, identified by tracking particles that are subducted at 50 m depth in the NCEP model data (Huang and Liu, 1999). Within the windows, all particles arrive within 5° of latitude. In the western boundary exchange windows, the particles reach their most equatorward latitude west of 150° W in the North Pacific and west of 120° W in the South Pacific. The travelling time (in years) to 5° latitude is also plotted within the exchange windows. The heavy lines are schematic representations of the exchange pathways. Various estimates of the transport of each pathway are labelled on each pathway. The superscripts denote: none for Huang and Liu (1999) (NCEP model current); * for Wijiffels (1993) (inverse calculation with hydrographic data); ^ for Johnson and McPhaden (1999) (geostrophic calculation); + for Lukas et al. (1991) (ADCP measurement); and # for Lindstrom et al. (1987) and Butt and Lindstrom (1994) (ADCP measurement, split with 7 Sv and 5 Sv in the New Guinea and New Ireland Coastal Undercurrents, respectively).