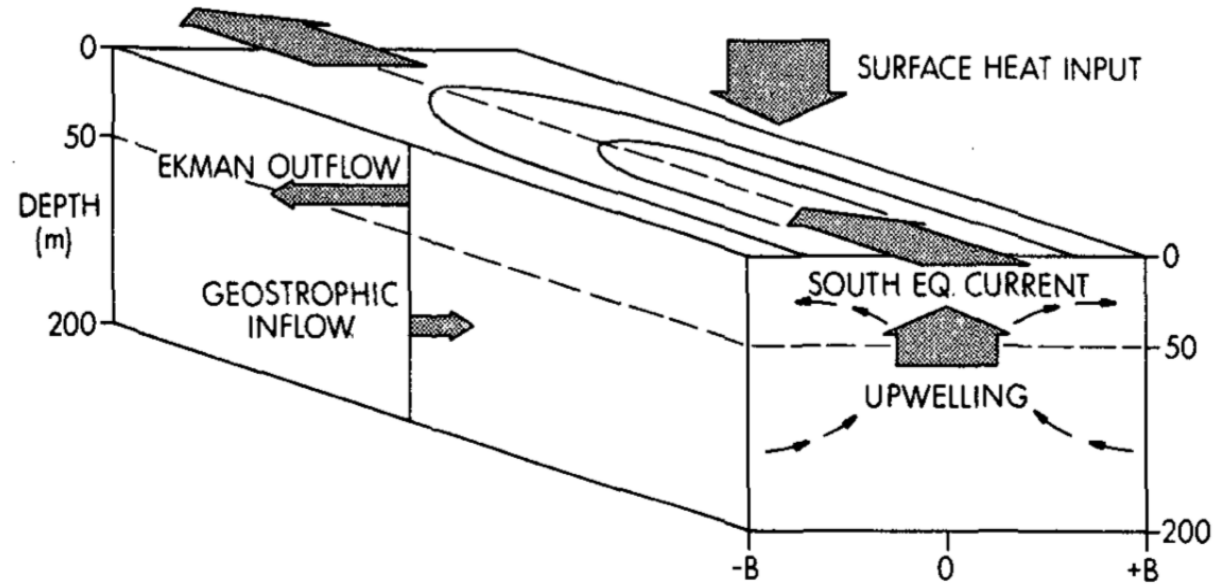


Equatorial upwelling: pulled from above or pushed from below?

Popular understanding tries to explain vertical motion using horizontal forces.

ENSO theory argues upwelling is pulled from above by wind-driven divergence.

Decadal variability studies assume that upwelling can be pushed from below.



Wyrтки (1981)

20-50% of Pacific equatorial upwelling is pushed from below

Push from below happens in blue area (upwelling produces KE here)

Potential energy that enables this is produced by off-equatorial downwelling.

Energy cycle implies that off-equatorial momentum and buoyancy forcings shape equatorial w.

