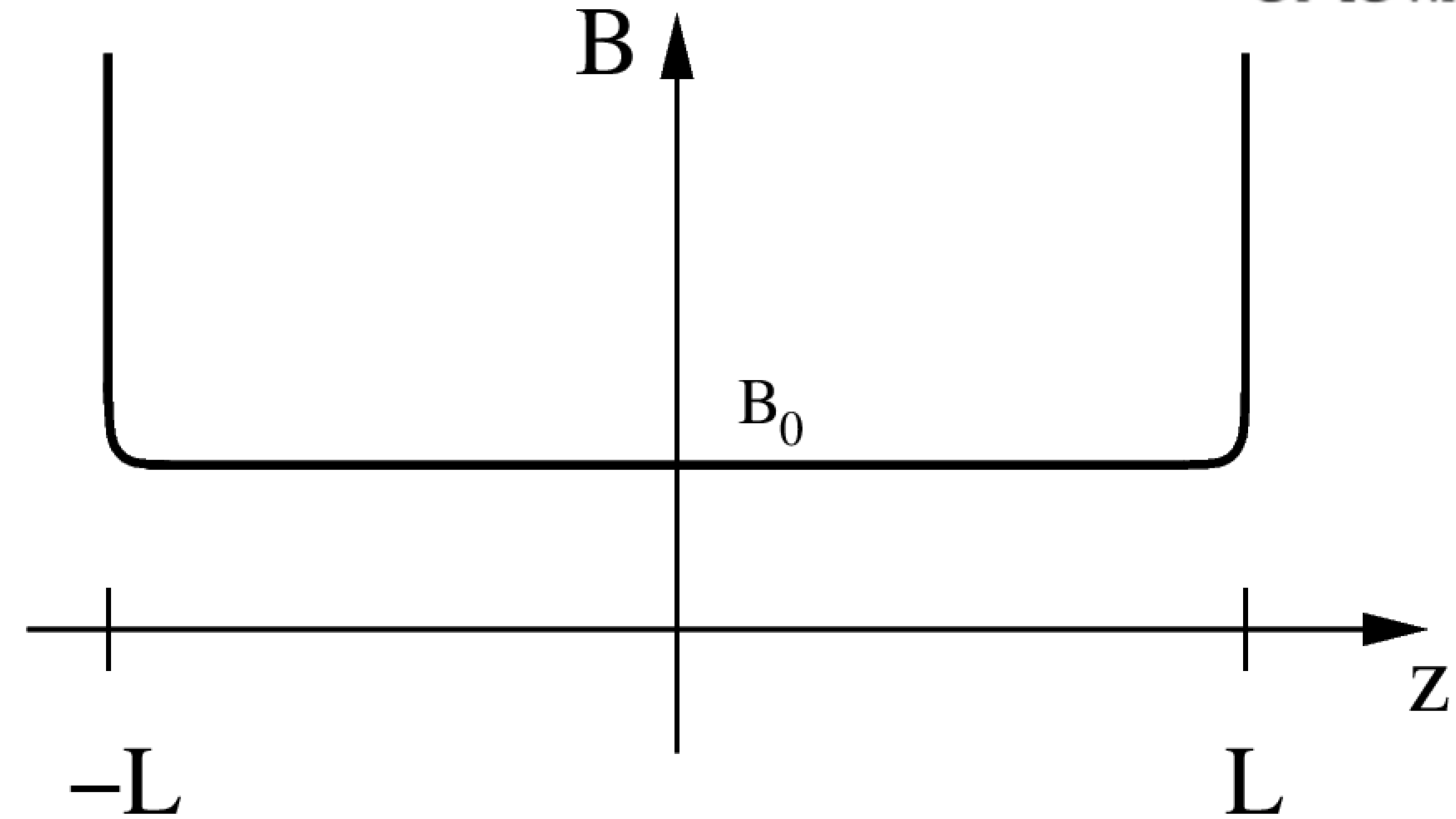# Adiabatic Invariance

At point z=0, $v_\parallel = v_\perp$

If you increase B_0 to $2B_0$, how to the components of velocity change?

(1) $v_\perp \uparrow, v_\parallel \uparrow$

(2) $v_\perp \uparrow, v_\parallel -$

(3) $v_\perp -, v_\parallel \downarrow$

(4) $v_\perp \downarrow, v_\parallel \downarrow$

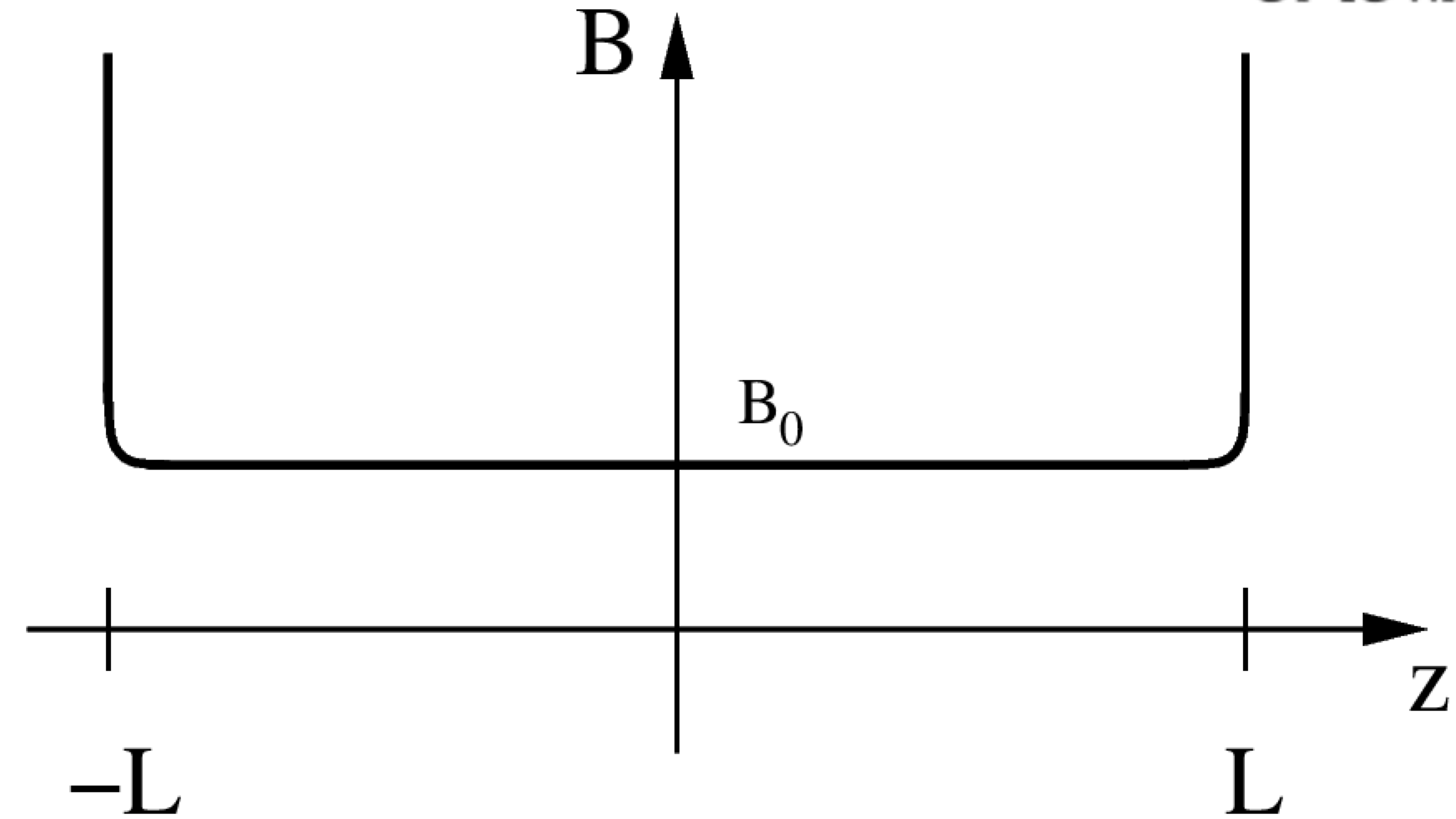# Adiabatic Invariance

At point z=0, $v_\parallel = v_\perp$

If you increase B_0 to $2B_0$, how to the components of velocity change?

(1) $v_\perp \uparrow, v_\parallel \uparrow$

(2) $v_\perp \uparrow, v_\parallel -$

(3) $v_\perp -, v_\parallel \downarrow$

(4) $v_\perp \downarrow, v_\parallel \downarrow$

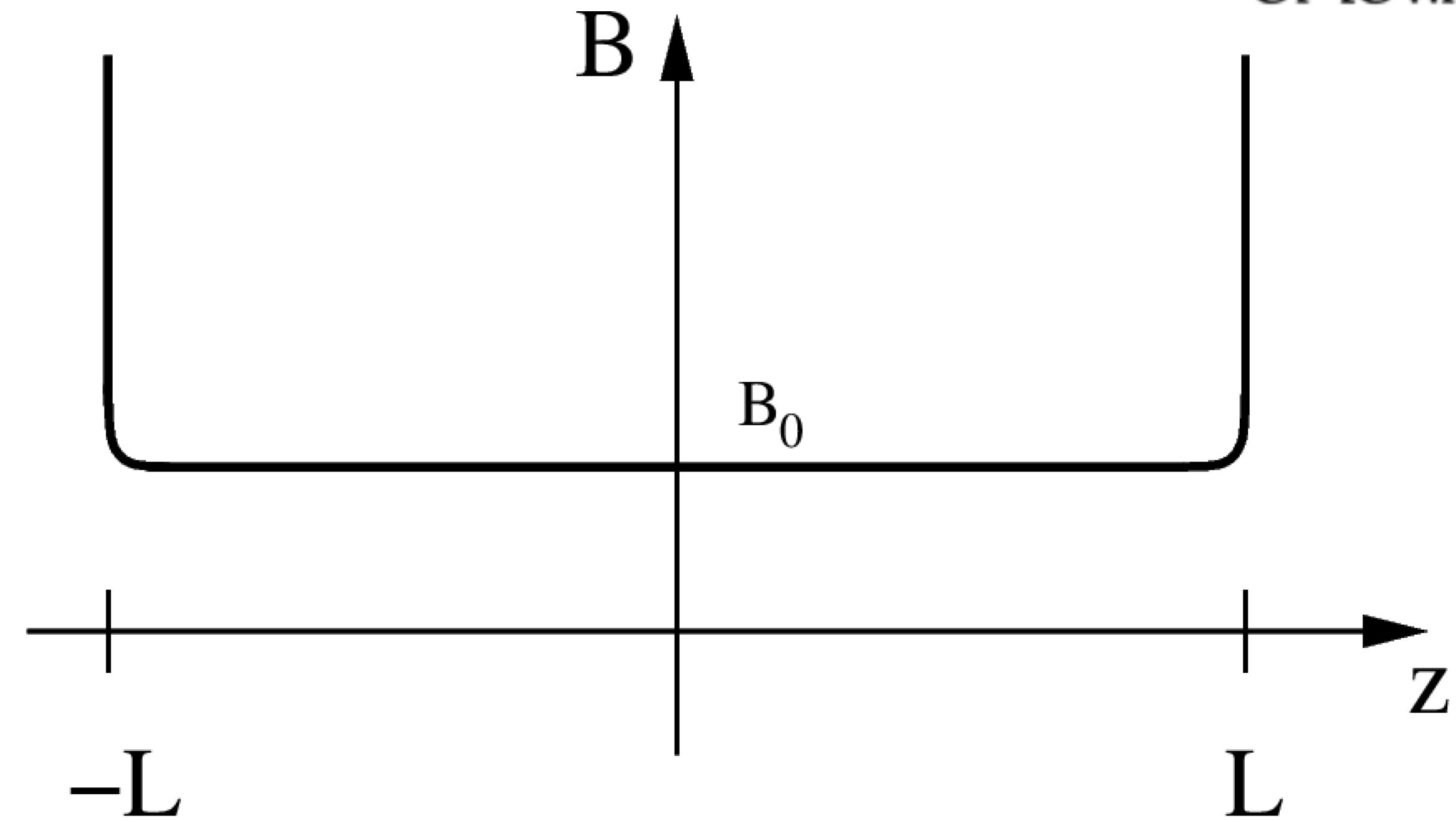# Adiabatic Invariance

At point z=0, $v_\parallel = v_\perp$

If you increase L to $2L$, how to the components of velocity change?

(1) $v_\perp \downarrow, v_\parallel -$

(2) $v_\perp \downarrow, v_\parallel \uparrow$

(3) $v_\perp -, v_\parallel \downarrow$

(4) $v_\perp \downarrow, v_\parallel \downarrow$

Adiabatic Invariance

At point z=0, $v_\parallel = v_\perp$

If you increase L to $2L$, how to the components of velocity change?

(1) $\quad v_\perp \downarrow, v_\parallel -$

(2) $\quad v_\perp \downarrow, v_\parallel \uparrow$

(3) $\quad v_\perp -, v_\parallel \downarrow$

(4) $\quad v_\perp \downarrow, v_\parallel \downarrow$

B

B_0

$-L$

L

z