

REASON THAT  $E_X$  CORRELATES WITH  $B_Y$  AND/OR  $B_Z$

ASSUME THAT  $E_{\parallel} = 0$  ON THE ION SCALE

$$E_X b_X + e_Y B_Y + e_Z B_Z = 0$$

If  $b_X = e_Y = e_Z = 0$  because there is no reconnection, then  $E_X$ ,  $B_Y$ , and  $B_Z$  have no necessary relationship to each other.

If there is reconnection,  $b_X$ ,  $e_Y$ , and/or  $e_Z \neq 0$  and

$$\begin{aligned} E_X &= - (e_Y/b_X) B_Y - (e_Z/b_X) B_Z \\ &= - a B_Y - b B_Z \quad \text{where } a = (e_Y/b_X) \text{ and } b = (e_Z/b_X) \end{aligned}$$

IF

$a$  and  $b$  are constant and  $E_X$  correlates with  $B_Y$  and/or  $B_Z$

THEN

The small fields that determine reconnection may be obtained from the large and easily measured fields, by least-squares fits.