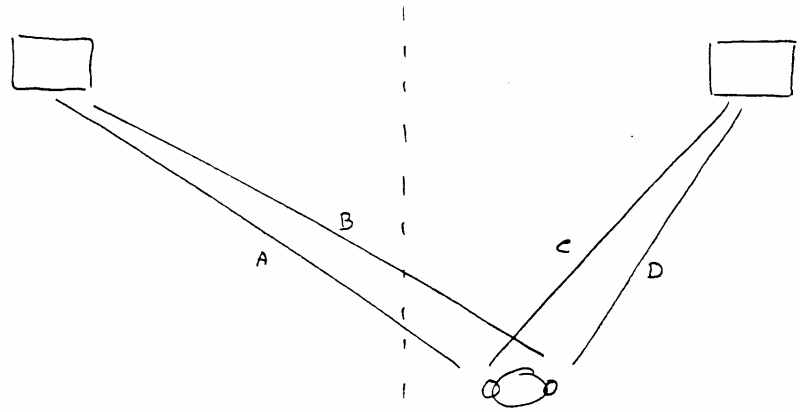
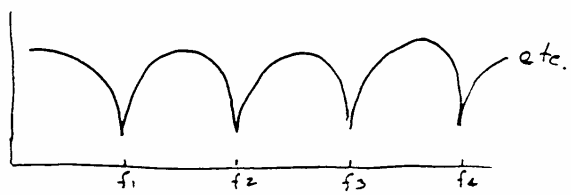
Figure 4. Phasors for Off-Center Locations



When the signal at L equals that at R (phantom center information), there will be unequal paths to each ear, producing cancellations and reinforcements. The lowest frequency at which cancellation will occur at the left ear is:

$$f_1 = 0.5\ c(A - C),$$

where c is the speed of sound. Thus:



$f_2 = 3f_1/2$

$f_3 = 5f_1/2$

$f_4 = 7f_1/2$, etc.

Another set of phasors will exist at the right ear, with f_1 determined as:

$$f_1 = 0.5\ c(B - D)$$