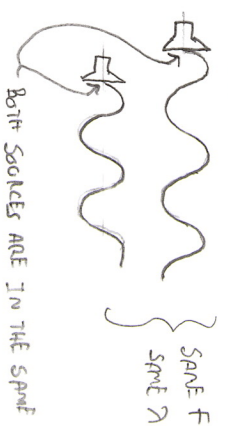


GENERAL 2 SOURCE INTERFERENCE (SPATIAL) SOUND, LIGHT, WATER ...

• COHERENT SOURCES:

- SAME FREQUENCY
 - SAME WAVELENGTH
 - PHASE RELATIONSHIP DOES NOT CHANGE WITH TIME
- SIMPLE CASES:
- IN PHASE



• 180° OUT OF PHASE



• CONDITIONS FOR CONSTRUCTIVE AND DESTRUCTIVE INTERFERENCE.

- 2 COHERENT SOURCES IN PHASE

CONSTRUCTIVE: IF $PLD = m\lambda$; $m = 0, 1, 2, 3, \dots$

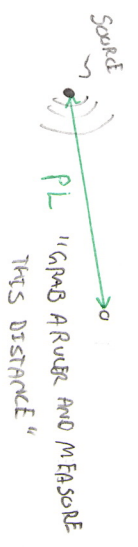
DESTRUCTIVE: IF $PLD = (m + \frac{1}{2})\lambda$; $m = 0, 1, 2, 3, \dots$

- 2 COHERENT SOURCES 180° OUT OF PHASE

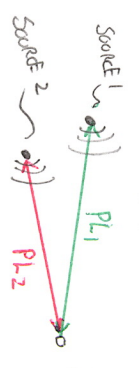
CONSTRUCTIVE: IF $PLD = (m + \frac{1}{2})\lambda$; $m = 0, 1, 2, 3, \dots$

DESTRUCTIVE: IF $PLD = m\lambda$; $m = 0, 1, 2, 3, \dots$

• PATH LENGTH [L] \equiv PL = DISTANCE FROM A SOURCE TO YOUR POINT OF INTEREST IN SPACE



• PATH LENGTH DIFFERENCE [L] \equiv PLD = DIFFERENCE BETWEEN 2 PATH LENGTHS.



$PLD = |PL_1 - PL_2|$