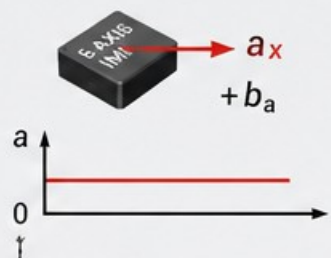
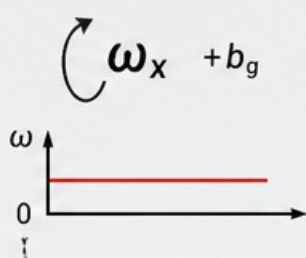


SMALL ERRORS

ACCELEROMETER BIAS

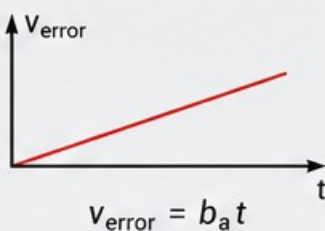


GYROSCOPE BIAS



VELOCITY ERROR GROWTH

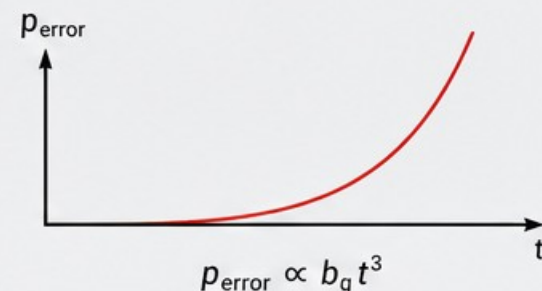
FROM ACCEL BIAS



FROM GYRO BIAS (ATTITUDE ERROR $\rightarrow$ ACCEL ERROR)

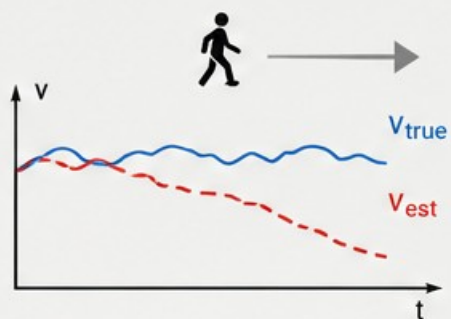


POSITION ERROR GROWTH

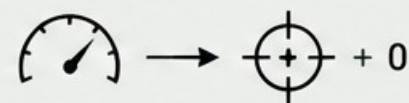
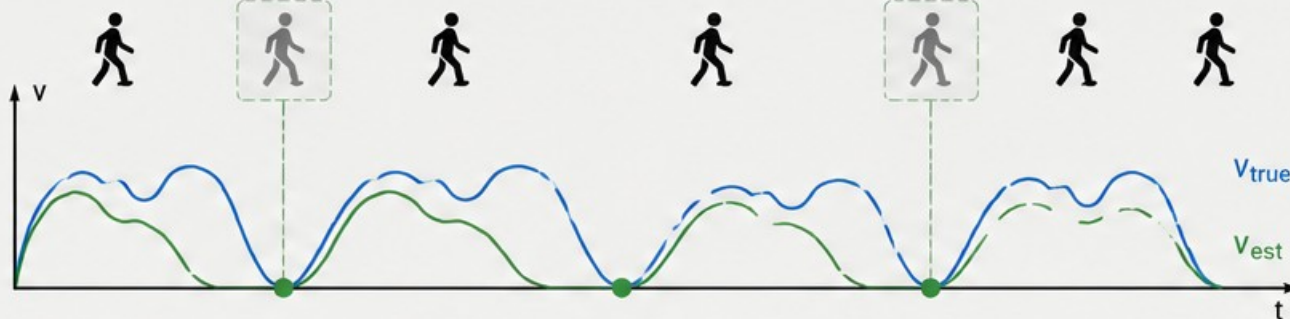


EVEN TINY BIASES $\rightarrow$ UNBOUNDED DRIFT AFTER INTEGRATION

WITHOUT CORRECTION



WITH ZERO VELOCITY UPDATES (ZUPT)



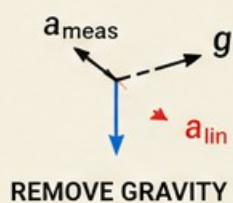
DRIFT IS CONTROLLED



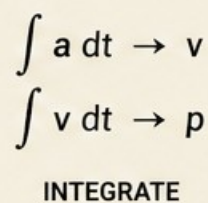
MEASURE



ESTIMATE
ORIENTATION



REMOVE GRAVITY



INTEGRATE



BIAS + NOISE
 $\rightarrow$ DRIFT



ZUPT
 $\rightarrow$ RESET

