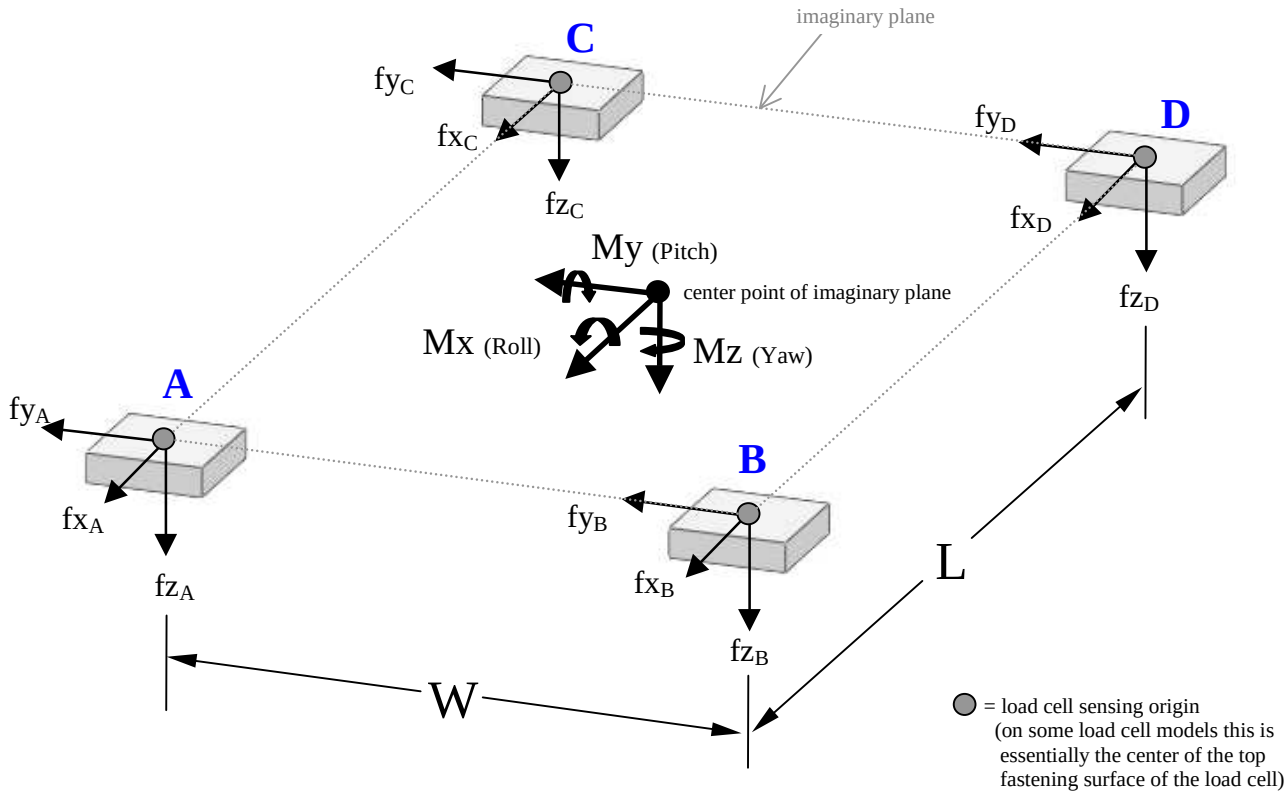
CALCULATION OF NET PLATFORM FORCES AND MOMENTS* USING FOUR TRIAX LOAD CELLS (A,B,C,& D) ARRANGED AS SHOWN BETWEEN A PLATFORM AND "GROUND"

*Assumes structural stiffness of platform assembly is such that each load cell is subjected *only to forces* and not individually subjected to any *localized moments*. In other words, assumes all platform moments are *completely* reacted by the triaxial forces sensed by the load cells.



NET TRIAXIAL PLATFORM FORCES

$$Fx = fx_A + fx_B + fx_C + fx_D$$

$$Fy = fy_A + fy_B + fy_C + fy_D$$

$$Fz = fz_A + fz_B + fz_C + fz_D$$

NET TRIAXIAL PLATFORM MOMENTS ABOUT A COORDINATE SYSTEM LOCATED AT THE CENTER POINT OF THE IMAGINARY PLANE DEFINED BY THE LOAD CELL SENSING ORIGINS (INCLUDES FREE VECTOR MOMENTS DUE TO ANY FORCE COUPLES ACTING ON PLATFORM)

$$Mx = \frac{W}{2}\left(fz_A - fz_B + fz_C - fz_D\right)$$

$$My = \frac{L}{2}\left(-fz_A - fz_B + fz_C + fz_D\right)$$

$$Mz = \frac{L}{2}\left(fy_A + fy_B - fy_C - fy_D\right) + \frac{W}{2}\left(-fx_A + fx_B - fx_C + fx_D\right)$$

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