**Correction for handlebar static displacement**

Due to the rider posture vertical, longitudinal and lateral (static) forces are generated at the handlebars. However, the static forces in the lateral left (HBL\_Y) and right (HBR\_Y) handlebars are not due to posture (i.e., because of the deformation of the handlebars) and for this reason these forces are subtracted from the dynamic lateral forces. A scaling coefficient is obtained from the offset trial by checking the ratio of FY/FX AND FY/FZ (see Force\_Data folder sub\_OS.xlsx file). The mean of all 24 subjects for trial one is calculated in static displacement correction handlebars.xlsx. The following equations are applied to scale the lateral handlebar forces for all motions.

HBL\_Y\_scaled = 0.163\* HBL\_Y

HBR\_Y\_scaled = 0.163\* HBR\_Y

**Crosstalk formulas**

1. Heave

HBL\_X= 0.14402\*HBL\_Z % crosstalk for a vertical applied force left handlebar

HBR\_X= 0.14402\*HBR\_Z % crosstalk for a vertical applied force right handlebar

1. Surge

SP\_Z = 0.18\*SP\_X; %crosstalk for a longitudinal applied force seat

HBL\_Z =0.24\*HBL\_X; % crosstalk for a longitudinal applied force left handlebar

HBR\_Z =0.24\*HBR\_X; % crosstalk for a longitudinal applied force left handlebar

1. Sway

SP\_X = 0.16\*SP\_Y; % crosstalk for a lateral applied force seat

SP\_Z = 0.38\*SP\_Y; crosstalk for a lateral applied force seat

HBL\_X= 0.14402\*HBL\_Z %crosstalk for a vertical applied force left handlebar

HBR\_X= 0.14402\*HBR\_Z %crosstalk for a vertical applied force right handlebar

\*You can apply the same crosstalk equations for all motions, although for some motions you can exclude crosstalk for specific directions. For example, for heave there are almost 0 lateral forces at the seat. Footpegs have neglectable crosstalk.