We defined a set of local axes for the front frame that could later be interpreted in terms of the actual axes.

Up-down: an axis defined as sitting parallel to the line from the hub connecting the handlebars to the rest of the frame down through the center of the fork and intersecting the center of mass of the front fork.

Left-right: an axis defined as being normal to the up-down axis at the center of mass and parallel to the ground during normal operation of the bike

Front-back: an axis defined as being the cross product of the other two axes.

Front 1 finds the moment of inertia about the front-back axis perpendicular to the left-right axis.

Front 2 finds the moment of inertia about the left-right axis perpendicular to the front-back axis.

Front 3 27 degrees

Length of rod: 105.5 cm