

## *Appendix B*

The seven images to pass the transmission ratio and Q-switch build up time filters were images 14, 15, 24, 36, 38, 42, and 48. A portion of the data was lost from three of these images, (images 15, 24, and 42). The plots contained in this appendix are grouped as follows. Data from images 15, 24, and 42 are plotted together and data from images 14, 36, 38, and 48 are plotted together. This was done so the reader could look at the data from the images used to calculate the new (4 image) average image, separately from the data from the images where a portion of the data was lost. The plots contained in this appendix show the x, y, and z velocity components, along the horizontal and vertical centerlines of the calibration wheel, for each of the seven images.

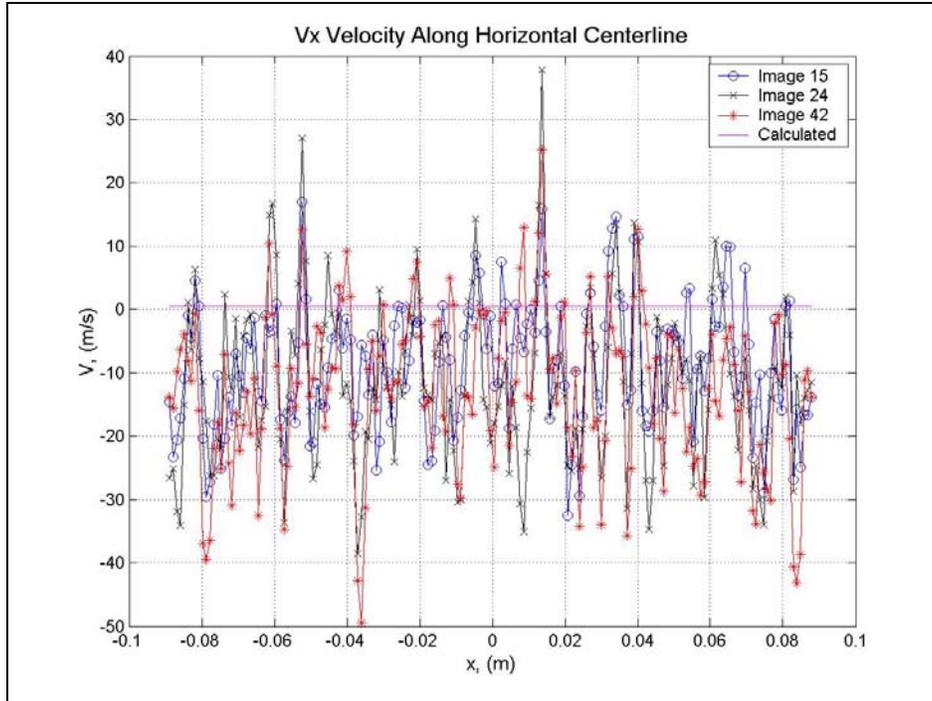


Figure B.1:  $x$  component of velocity along the horizontal centerline of the calibration wheel for images 15, 24, 42 and the values calculated from the angular velocity measured by the motor controller.

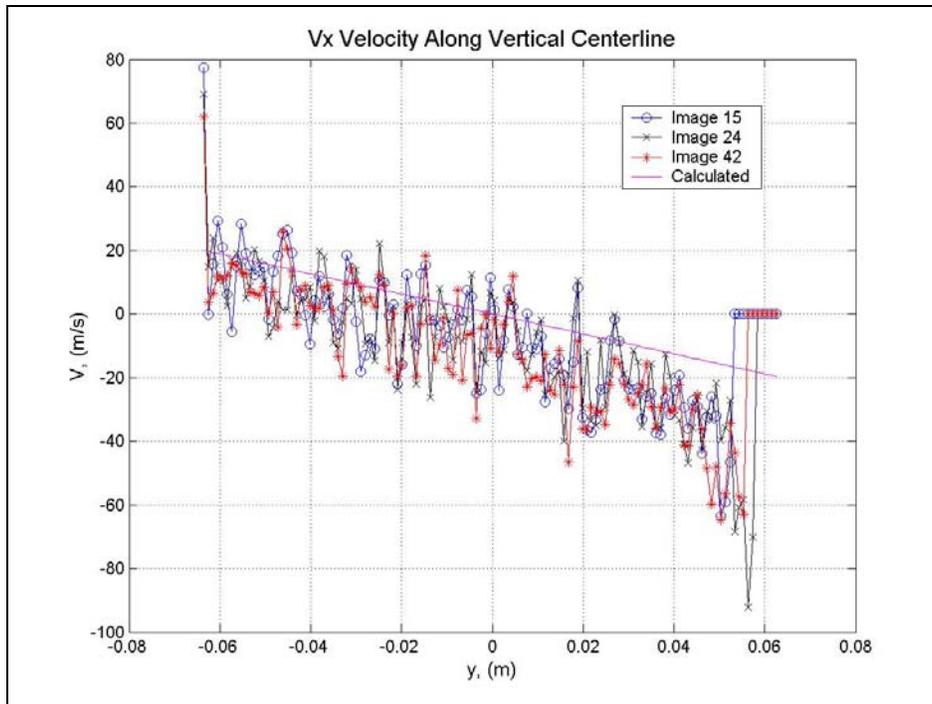


Figure B.2:  $x$  component of velocity along the vertical centerline of the calibration wheel for images 15, 24, 42 and the values calculated from the angular velocity measured by the motor controller.

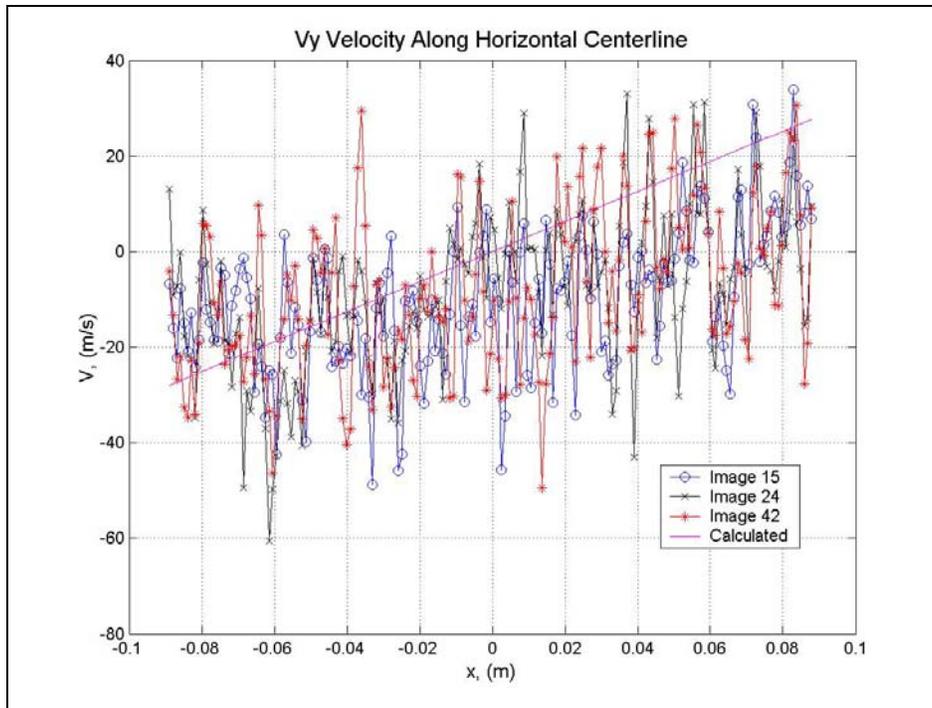


Figure B.3:  $y$  component of velocity along the horizontal centerline of the calibration wheel for images 15, 24, 42 and the values calculated from the angular velocity measured by the motor controller.

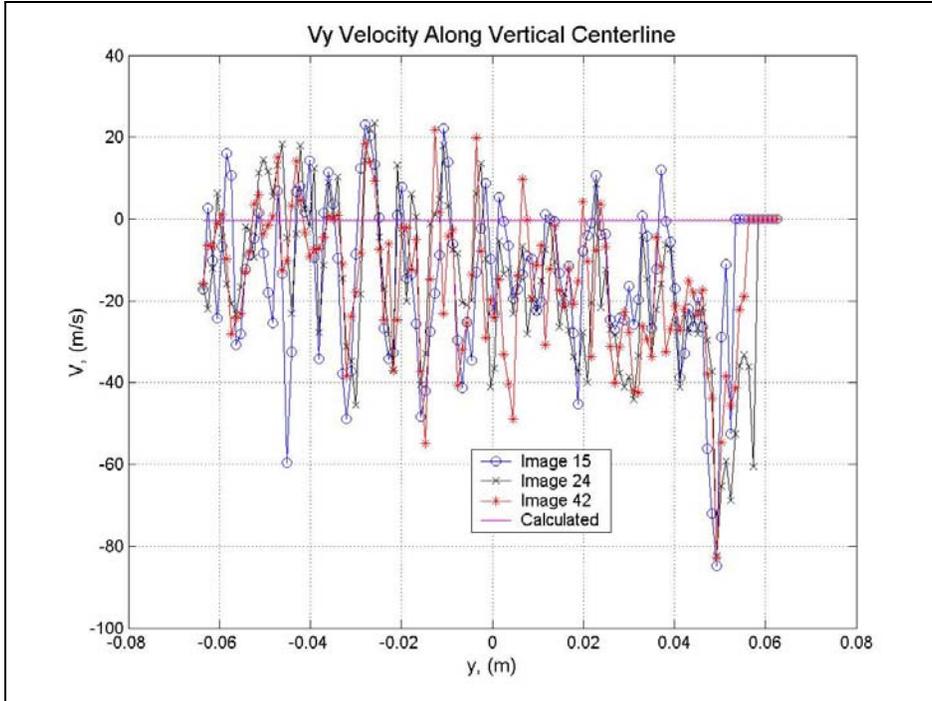


Figure B.4:  $y$  component of velocity along the vertical centerline of the calibration wheel for images 15, 24, 42 and the values calculated from the angular velocity measured by the motor controller.

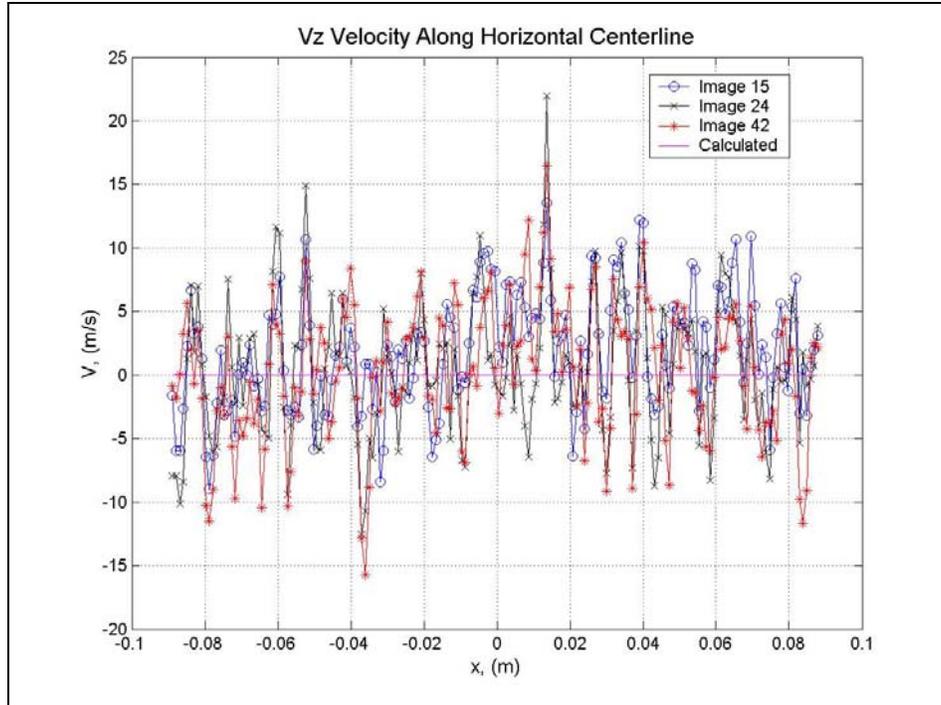


Figure B.5:  $z$  component of velocity along the horizontal centerline of the calibration wheel for images 15, 24, 42 and the values calculated from the angular velocity measured by the motor controller.

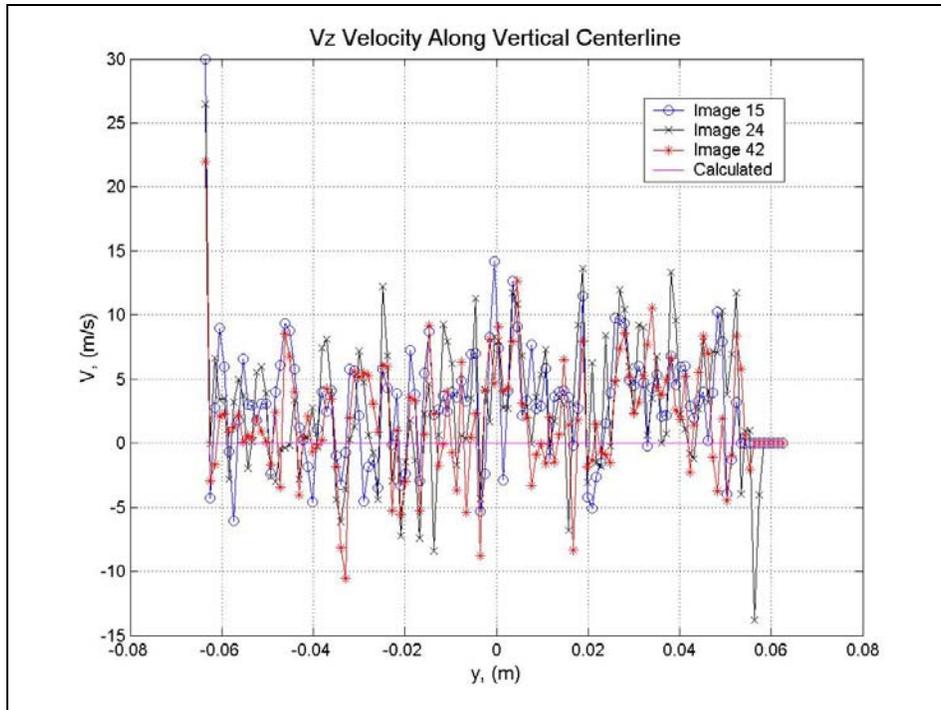


Figure B.6:  $z$  component of velocity along the vertical centerline of the calibration wheel for images 15, 24, 42 and the values calculated from the angular velocity measured by the motor controller.

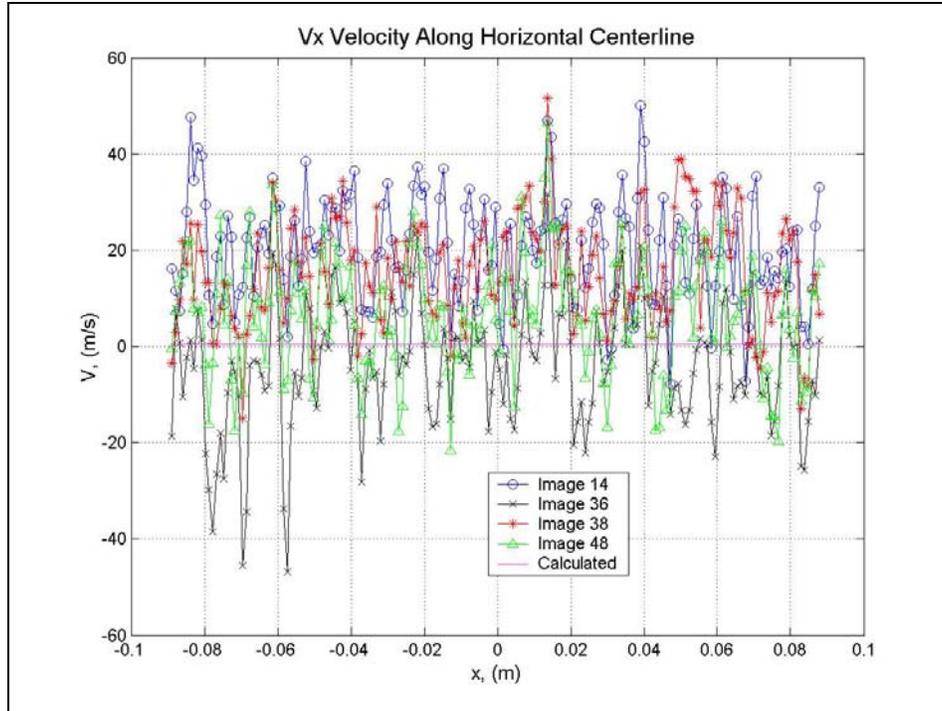


Figure B.7:  $x$  component of velocity along the horizontal centerline of the calibration wheel for images 14, 36, 38, 42 and the values calculated from the angular velocity measured by the motor controller.

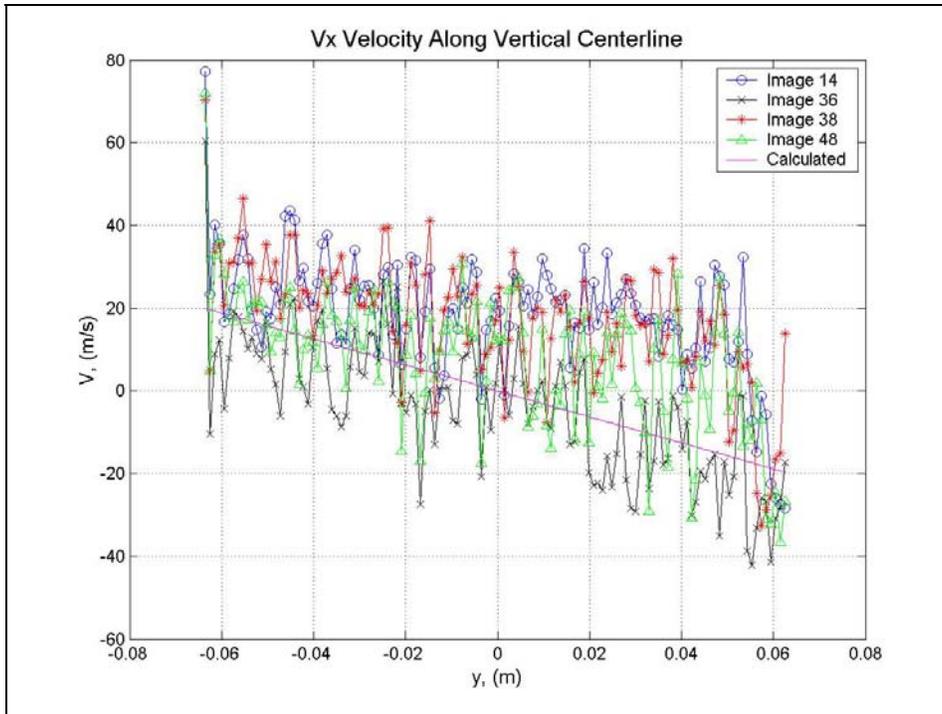


Figure B.8:  $x$  component of velocity along the vertical centerline of the calibration wheel for images 14, 36, 38, 42 and the values calculated from the angular velocity measured by the motor controller.

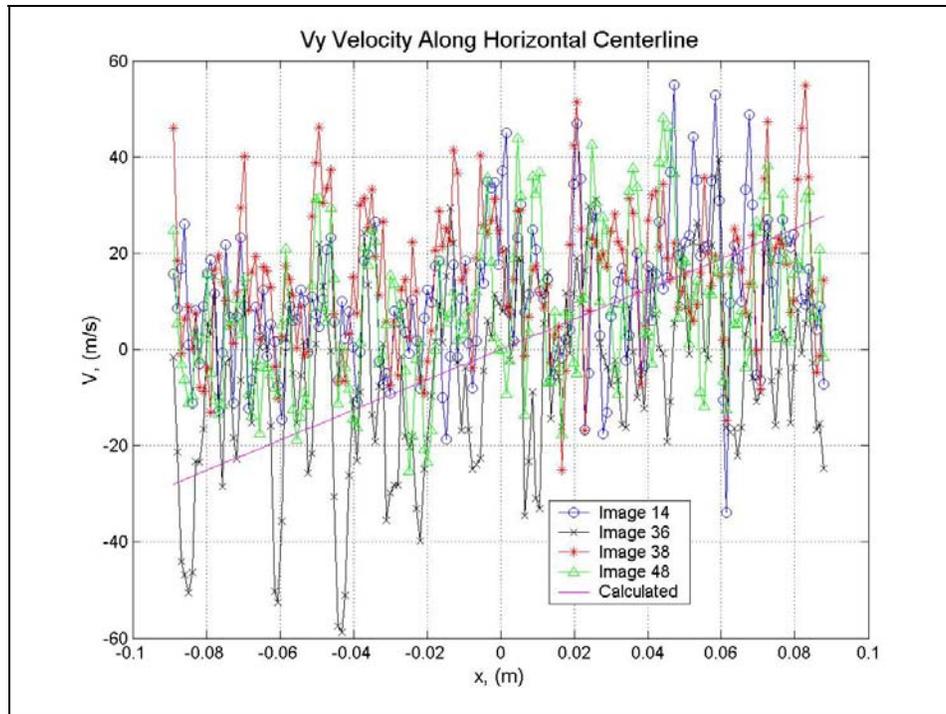


Figure B.9:  $y$  component of velocity along the horizontal centerline of the calibration wheel for images 14, 36, 38, 42 and the values calculated from the angular velocity measured by the motor controller.

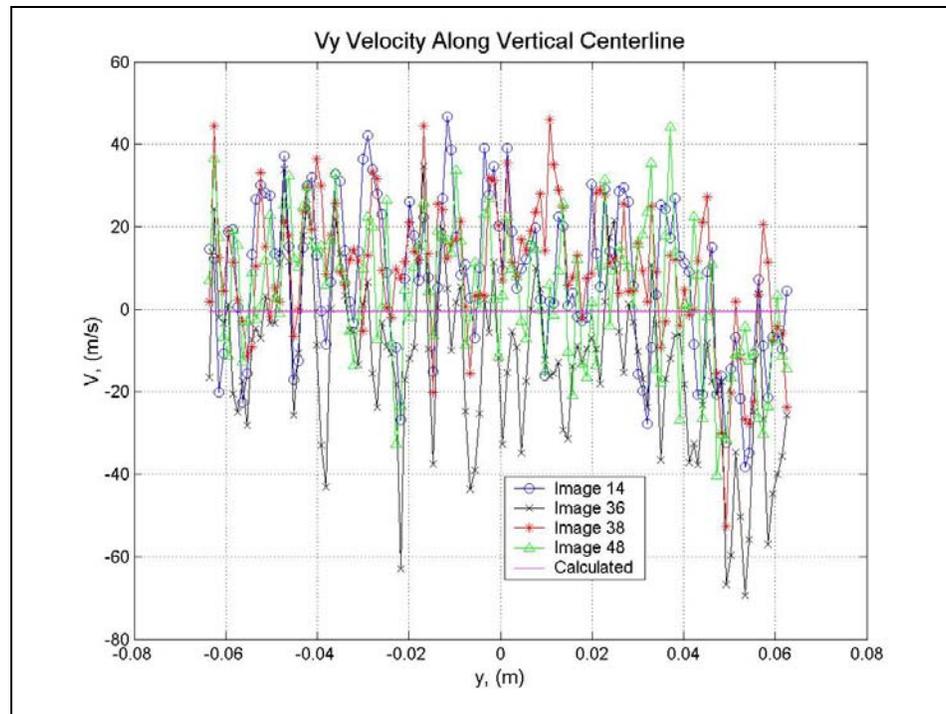


Figure B.10:  $y$  component of velocity along the vertical centerline of the calibration wheel for images 14, 36, 38, 42 and the values calculated from the angular velocity measured by the motor controller.

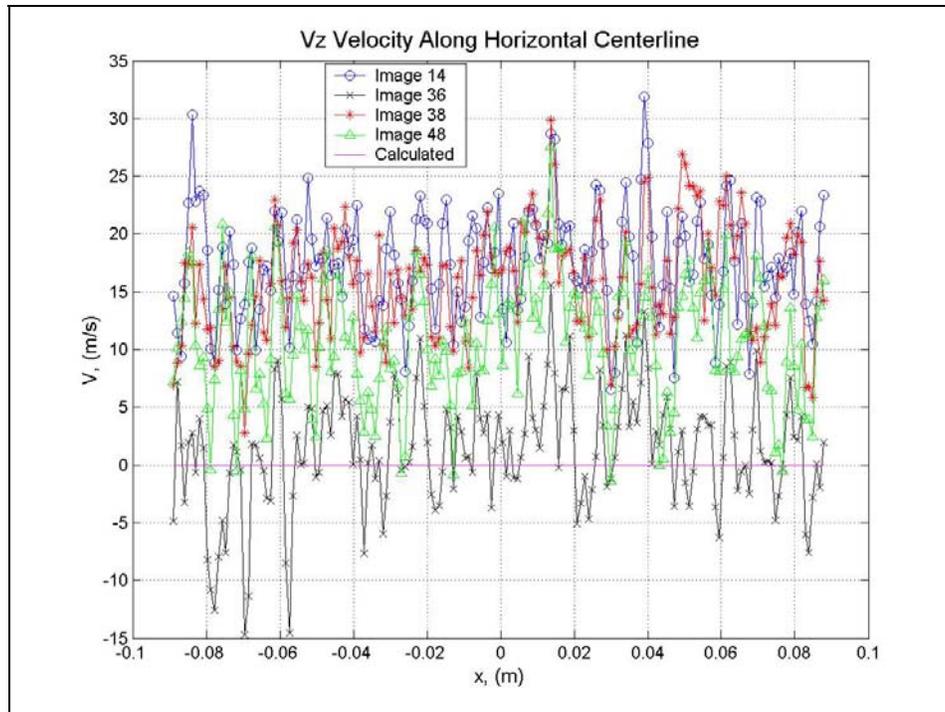


Figure B.11:  $z$  component of velocity along the horizontal centerline of the calibration wheel for images 14, 36, 38, 48 and the values calculated from the angular velocity measured by the motor controller.

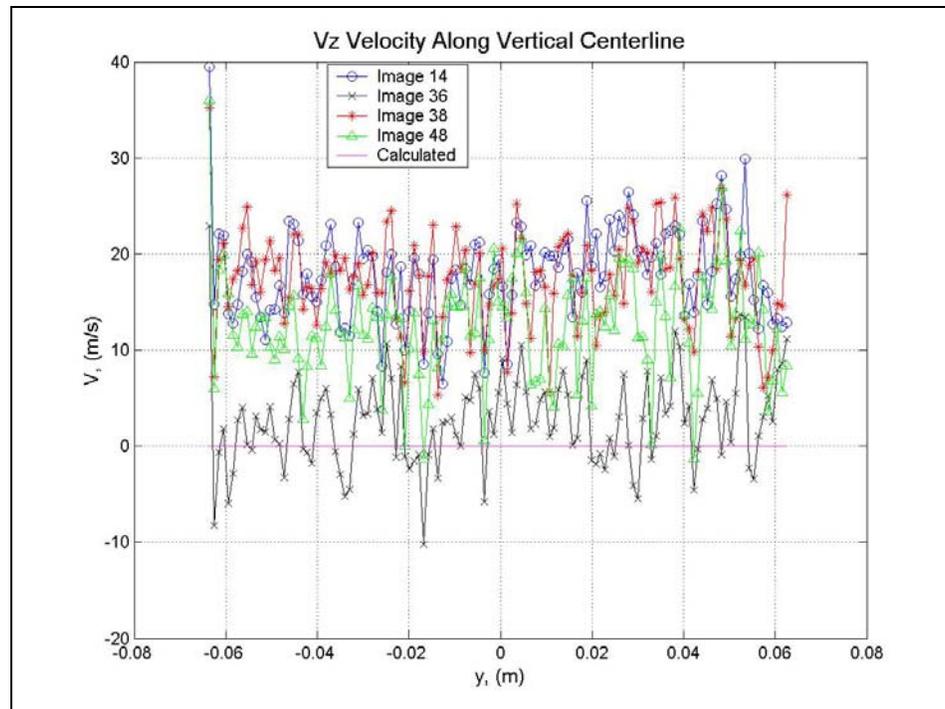


Figure B.12:  $z$  component of velocity along the vertical centerline of the calibration wheel for images 14, 36, 38, 48 and the values calculated from the angular velocity measured by the motor controller.

## *Vita*

John Fussell was born and grew up in Richmond, Virginia. He attended grade school and high school in Chesterfield County. After obtaining his high school diploma he attended John Tyler Community College in Chester, Virginia, where he earned his Associates in Applied Science Degree in Mechanical Engineering Technology. Next, he attended Virginia Polytechnic Institute and State University where he earned his Bachelors of Science Degree in Aerospace Engineering. While he was a student at VPI & SU he was introduced to experimental aerodynamics. During his time as a student at VPI & SU he helped to construct and test a general aviation aircraft model, a building model, and several submarine models. In addition to performing wind tunnel tests on a wide variety of models he was exposed to several quantitative and qualitative measurement techniques while working on these projects.