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Statistical Methods for Post-Correlation PIV Outlier Detection CHAN SENG PUN, ANDREE SUSANTO, DANA DABIRI, University of Washington — PIV is a technique that has been used for many years for velocity measurements. However, this technique is susceptible to producing outliers due to a variety of reasons. Many methods of correcting these post-correlation outliers have been proposed but almost all of them rely on the use of thresholds that due to flow field variability are not constant. We propose to use a method based on statistical analysis to automatically identify outliers independent of flow field variability. We will discuss its robustness and effects on overdetection (i.e. identifying good vectors as spurious vectors), and undetection (i.e. identifying spurious vectors as good vectors) for different types of simulated outliers and flow fields.

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