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Open source PIV software applied to streaming, time-resolved PIV data ZACHARY TAYLOR, ROI GURKA, ALEX LIBERZON, GREGORY KOPP, University of Western Ontario — The data handling requirements for time resolved PIV data have increased substantially in recent years as the advent in high speed imaging and real time streaming. Therefore, there is a need for new hardware and software solutions for data storage and analysis. The presented solution is based on open source software (OSS) which has proven to be a successful means of development. This includes the PIV algorithms and flow analysis software. The solution, based on OSS known as "URAPIV," originally was developed in Matlab and recently available in Python. The advantage of these scripting languages lies within their highly customizable platform; however, their routines cannot compete with commercially available software for computational speed. Thus, an effort has been undertaken to develop URAPIV-C++, a GUI based on the Qt 4 cross-platform open source library. This provides users with features commonly found in commercial packages and is comparable in processing speed to the commercial packages. The uniqueness of this package is in its complete handling of PIV experiments from the algorithms to post analysis under OSS license for large data sets. The package and its features are utilized in the recent STR-PIV system, which will be operable at the Advanced Facility for Avian Research at UWO. The wake flow behind an elongated body will be presented as a demonstration.

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