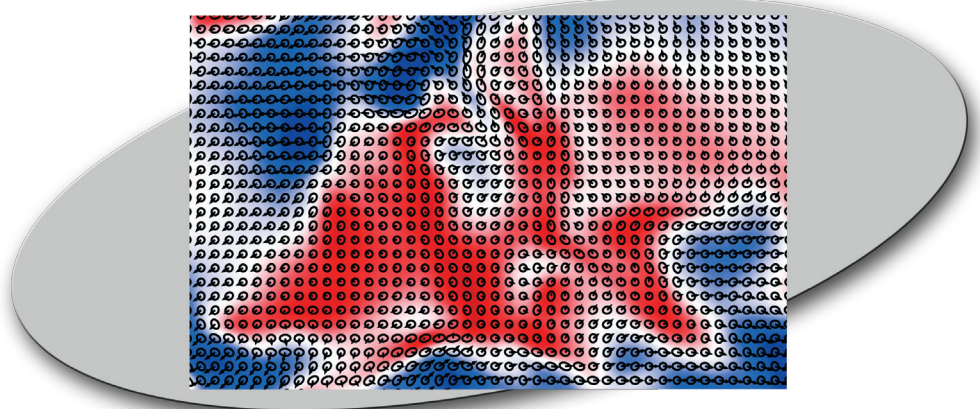


Adaptive PIV

LaVision's **Adaptive PIV** technology provides an automatic calculation of optimized interrogation window shapes based on the local flow properties. This leads to a significant improvement in accuracy and spatial resolution, especially in regions of strong velocity gradients, e.g. close to walls and reduces the processing complexity by minimizing the number of user-defined parameters.



Adaptive window shapes

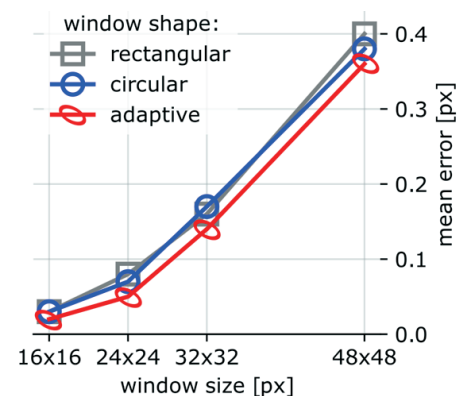
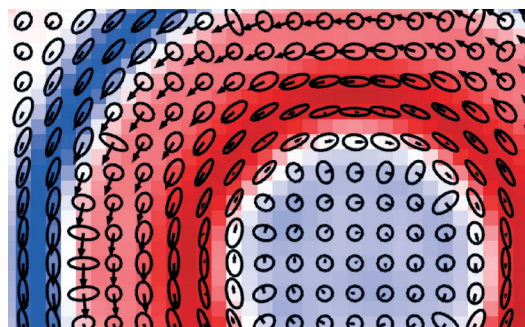
Based on the intermediate velocity gradient field, obtained by the initial pass of a multi-pass PIV evaluation scheme, the default circular interrogation shape is elongated perpendicular to the direction of the strongest velocity gradient. This enhances the spatial resolution and improves the quality of the correlation function. In particular, regions exhibiting high shear along fixed boundaries take advantage of the **Adaptive PIV** approach as the interrogation windows are automatically aligned along these boundaries.

Advantages

- ▶ improved spatial resolution
- ▶ self-adapting interrogation window shapes
- ▶ full GPU-processing support
- ▶ full support of all planar PIV & Stereo-PIV algorithms
- ▶ fully compatible with LaVision's uncertainty quantification framework

Availability

LaVision's **Adaptive PIV** is available from DaVis 10.2 for all planar PIV and Stereo-PIV processing methods (standard, sum-of-correlation, sliding sum-of-correlation, pyramid sum-of-correlation).



Advantage of **Adaptive PIV** shown for synthetic data: less error with adapting window shapes.

Data provided by LaVision are believed to be true. However, no responsibility is assumed for possible inaccuracies or omissions. All data are subject to change without notice.

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LaVisionUK Ltd

2 Minton Place / Victoria Road
Bicester, Oxon / OX26 6QB / United Kingdom
E-Mail: sales@lvision.com / www.lvisionuk.com
Phone: +44-(0)-870-997-6532 / Fax: +44-(0)-870-762-6252

LaVision GmbH

Anna-Vandenhoeck-Ring 19
D-37081 Göttingen / Germany
E-Mail: info@lvision.com / www.lvision.com
Tel. +49-(0)51-9004-0 / Fax +49-(0)51-9004-100

LaVision Inc.

211 W. Michigan Ave. / Suite 100
Ypsilanti, MI 48197 / USA
E-mail: sales@lvisioninc.com / www.lvisioninc.com
Phone: (734) 485 - 0913 / Fax: (240) 465 - 4306