

Particle streak velocimetry using Convolutional Neural Networks

Alexander V. Grayver · Jerome Noir

Received: - / Accepted: -

Abstract Insert your abstract here.

Keywords Streak analysis · Neural Networks · Turbulent Flow

1 Introduction

Particle Image Velocimetry (PIV) is arguably the most widely used technique to quantitatively study experimental flows [1].

2 Methods

$$a^2 + b^2 = c^2 \tag{1}$$

A. V. Grayver
Institute of Geophysics, ETH Zurich
Sonneggstrasse 5
8092 Zurich, Switzerland
Tel.: +41-44-6333154
E-mail: agrayver@erdw.ethz.ch

J. Noir
Institute of Geophysics, ETH Zurich
Sonneggstrasse 5
8092 Zurich, Switzerland
Tel.: +41-44-6337593
E-mail: jerome.noir@erdw.ethz.ch

3 Results

3.1 Network accuracy

3.2 Validation with DNS

3.3 Validation with experimental images

4 Conclusions

The Juoyter Python notebooks of all programs used in this study can be found on the github *Give link*.

Acknowledgements Thank PyTorch/mathplotlib/etc authors, Meredith for DNS, Adrian for discussions.

References

1. Raffel, M., Willert, C.E., Scarano, F., Kähler, C.J., Wereley, S.T., Kompenhans, J.: Particle image velocimetry: a practical guide. Springer (2018)