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Supporting Information for

Lagrangian Coherent Structures and Vortex Formation in High Spatiotemporal-Resolution Satellite Winds of an Atmospheric Kármán Vortex Street

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Additional Supporting Information (Files uploaded separately)

Captions for Data Set S1
Captions for Movie S1

Introduction

This supporting information provides the C++/Matlab source code for the visualization techniques discussed in the paper, including the scripts to reproduce the Matlab figures (Data Set S1). In addition, a supplemental video lists the pros and cons of each visualization technique and displays animations for each visualization technique, applied to both the numerically simulated cylinder flow and the observed satellite winds of Guadalupe Island (Movie S1).

Data Set S1. With this paper, we provide a C++ header-only implementation of all visualization techniques, which can be found in the file *cpp/vislcs.hpp*. For convenience, all visualization techniques are wrapped via the MEX interface to be callable from Matlab. The Matlab script *install.m* compiles the C++ code in Matlab and the class in *flow.m* provides a convenient interface to read and visualize the data. The remaining files *figX_*.m* contain scripts to reproduce the figures displayed throughout the paper and likewise serve as example on how to use the code.

Movie S1. The supplemental movie shows animations of all visualization techniques on both the numerically simulated cylinder flow and the observed satellite winds around Guadalupe Island. In addition, all visualization techniques are accompanied by an overview of pros and cons, giving advice on how to apply the visualization techniques.