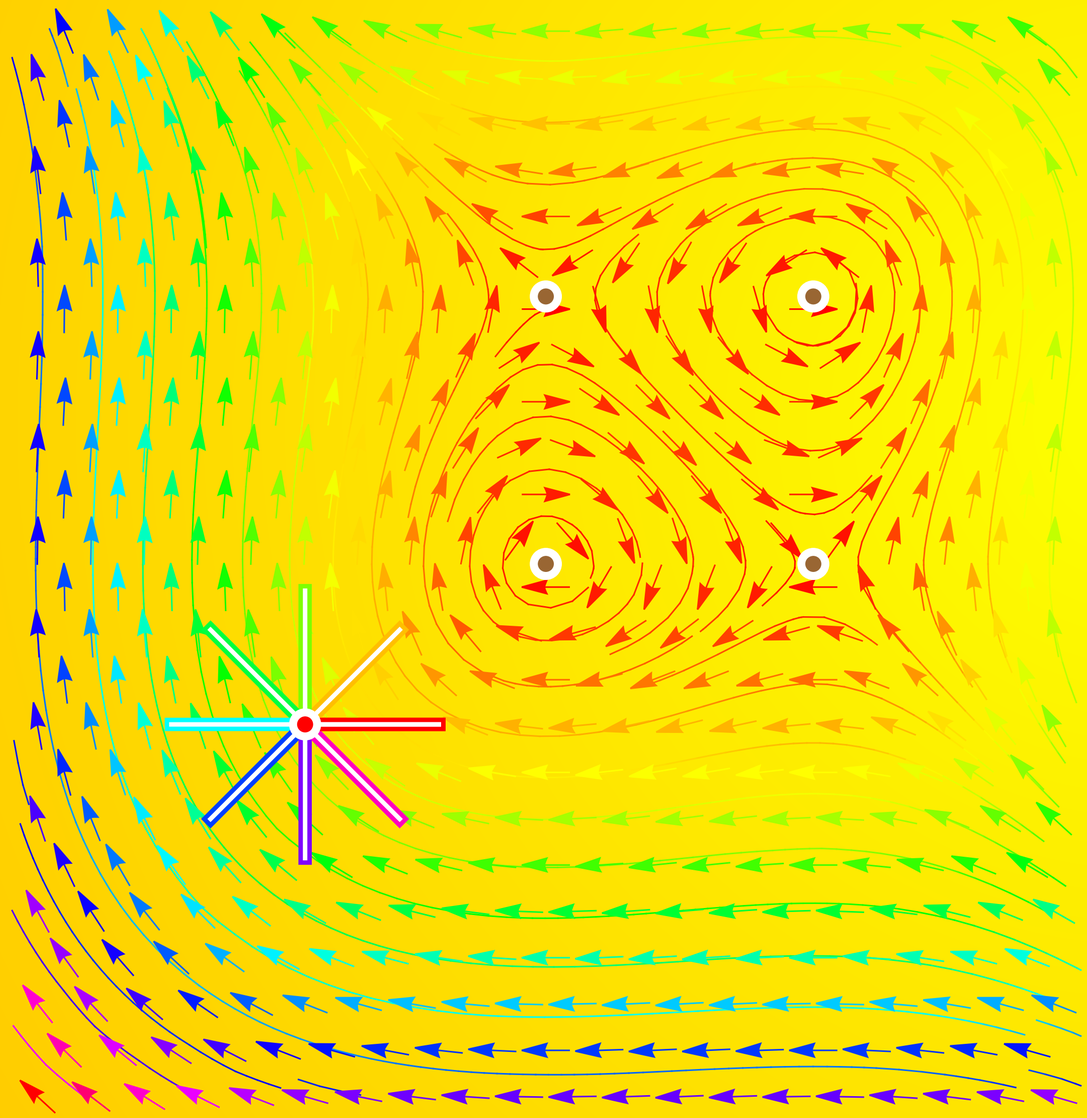
Lecture 19



Vector Fields

Curl

Table of Contents

1) Vector Fields

2) Curl

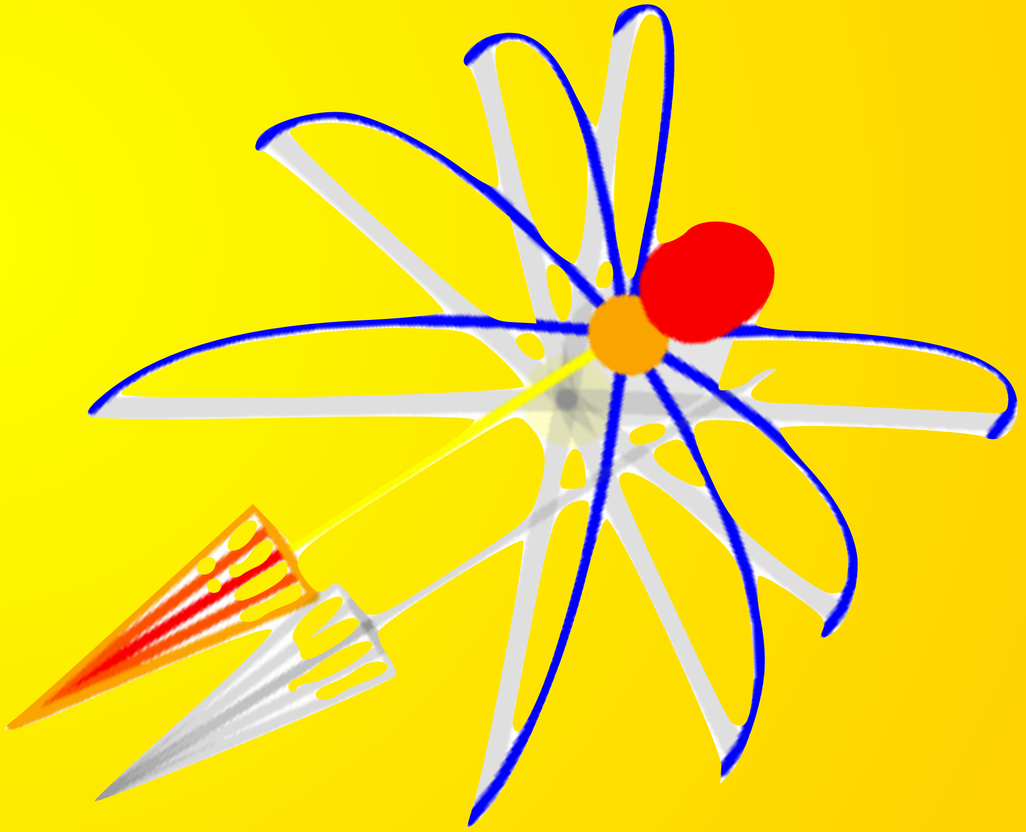
3) Twister

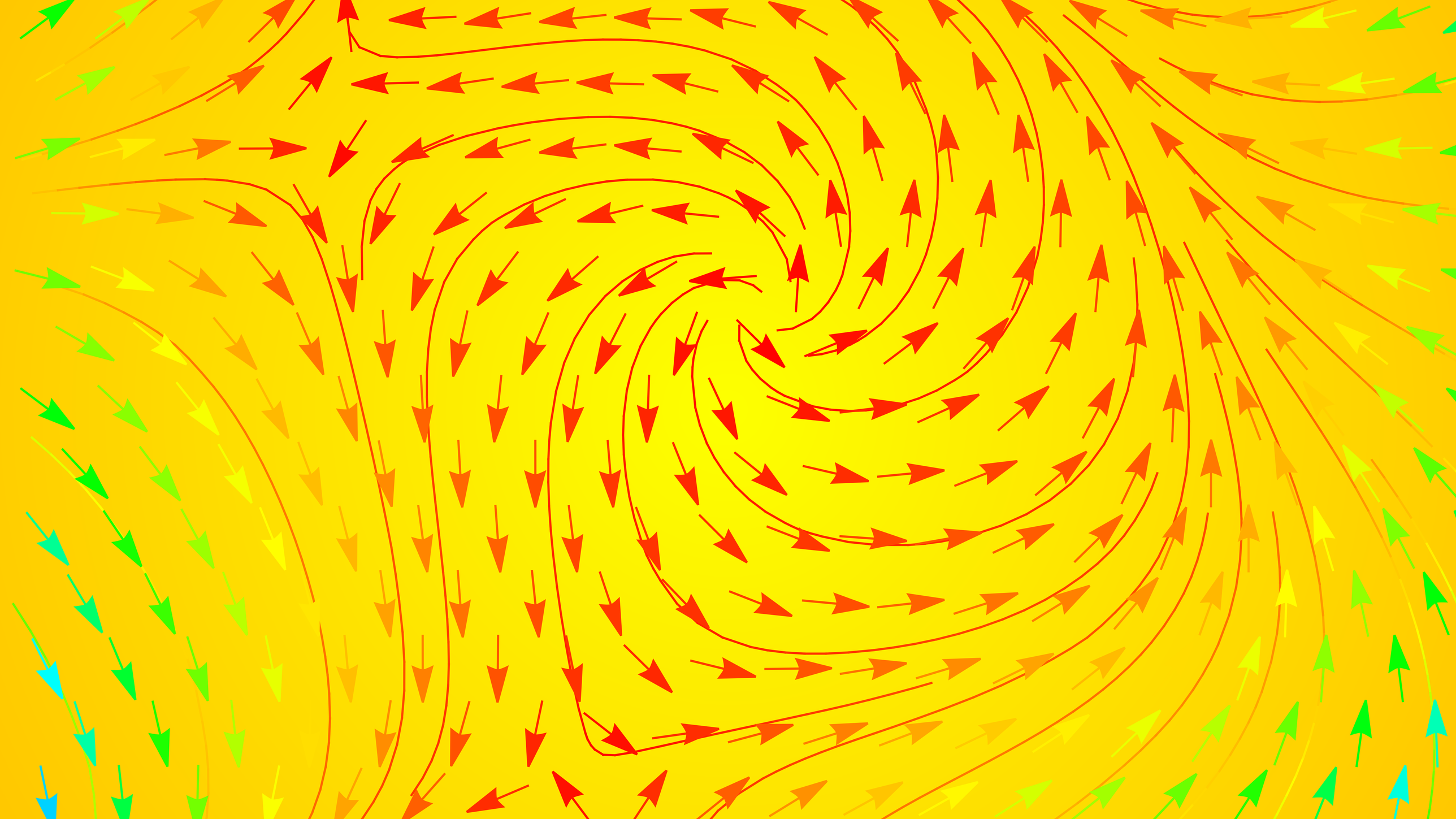
4) Work sheet problems

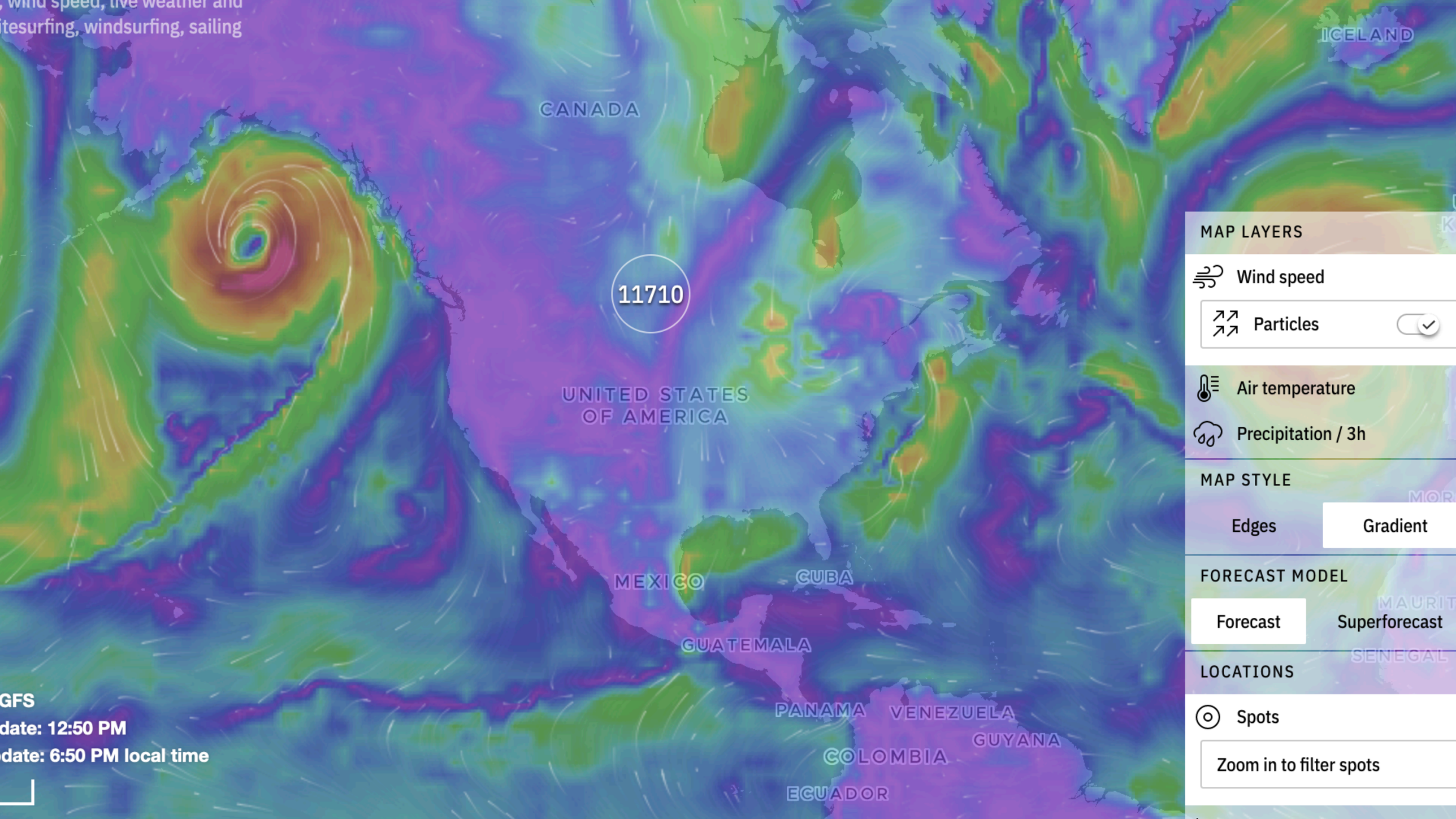
Planar Vectorfields

$$\overrightarrow{F}(x,y) = \langle P(x,y), Q(x,y) \rangle$$

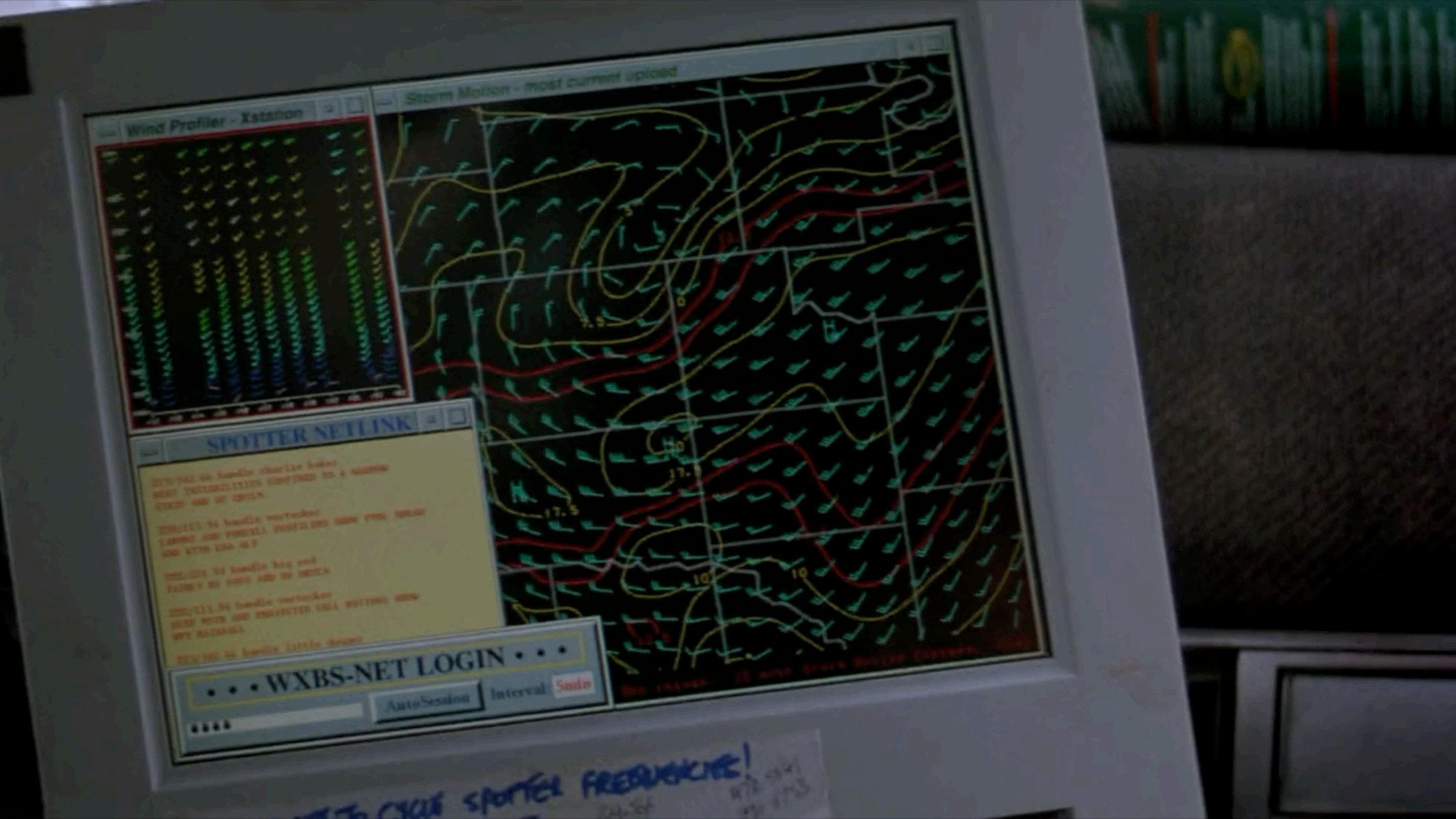
<P,Q>





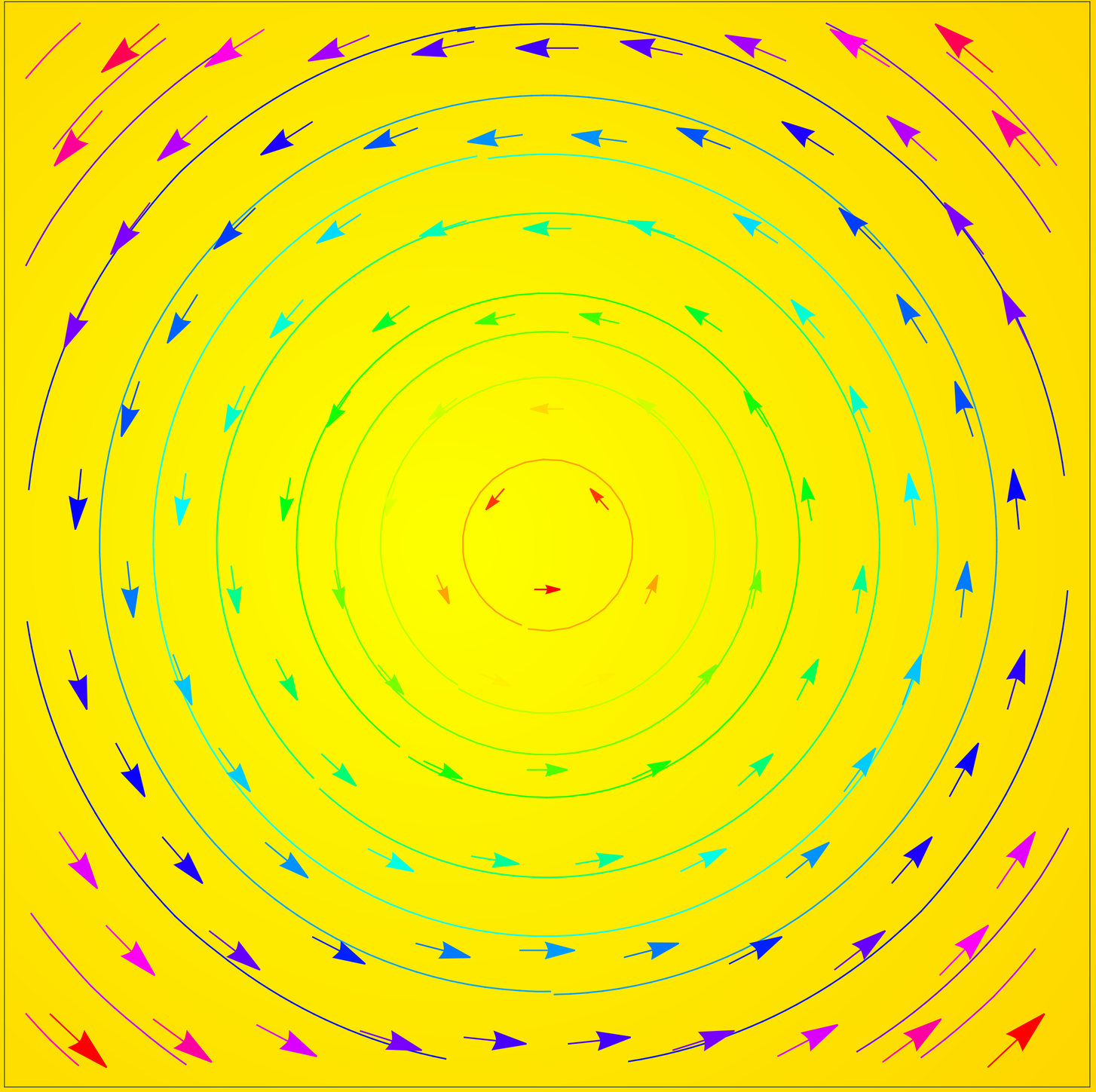

, wind speed, live weather and
itesurfing, windsurfing, sailing
ICELAND
CANADA
11710
UNITED STATES
OF AMERICA
MEXICO
CUBA
GUATEMALA
PANAMA
VENEZUELA
GUYANA
COLOMBIA
ECUADOR
MAP LAYERS
Wind speed
Particles
Air temperature
Precipitation / 3h
MAP STYLE
Edges
Gradient
FORECAST MODEL
Forecast
Superforecast
LOCATIONS
Spots
Zoom in to filter spots
GFS
date: 12:50 PM
date: 6:50 PM local time

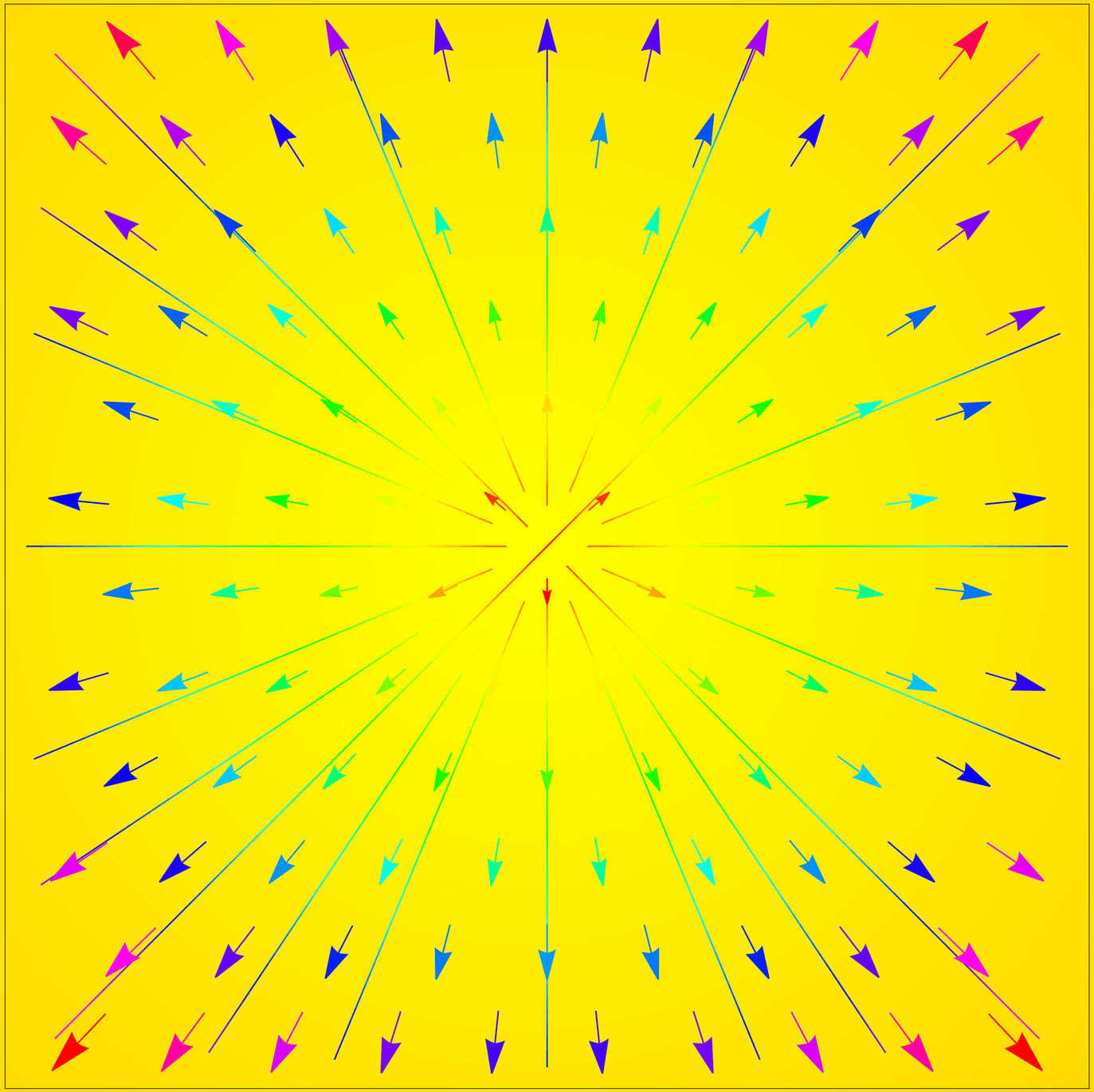
GORSH
HELD

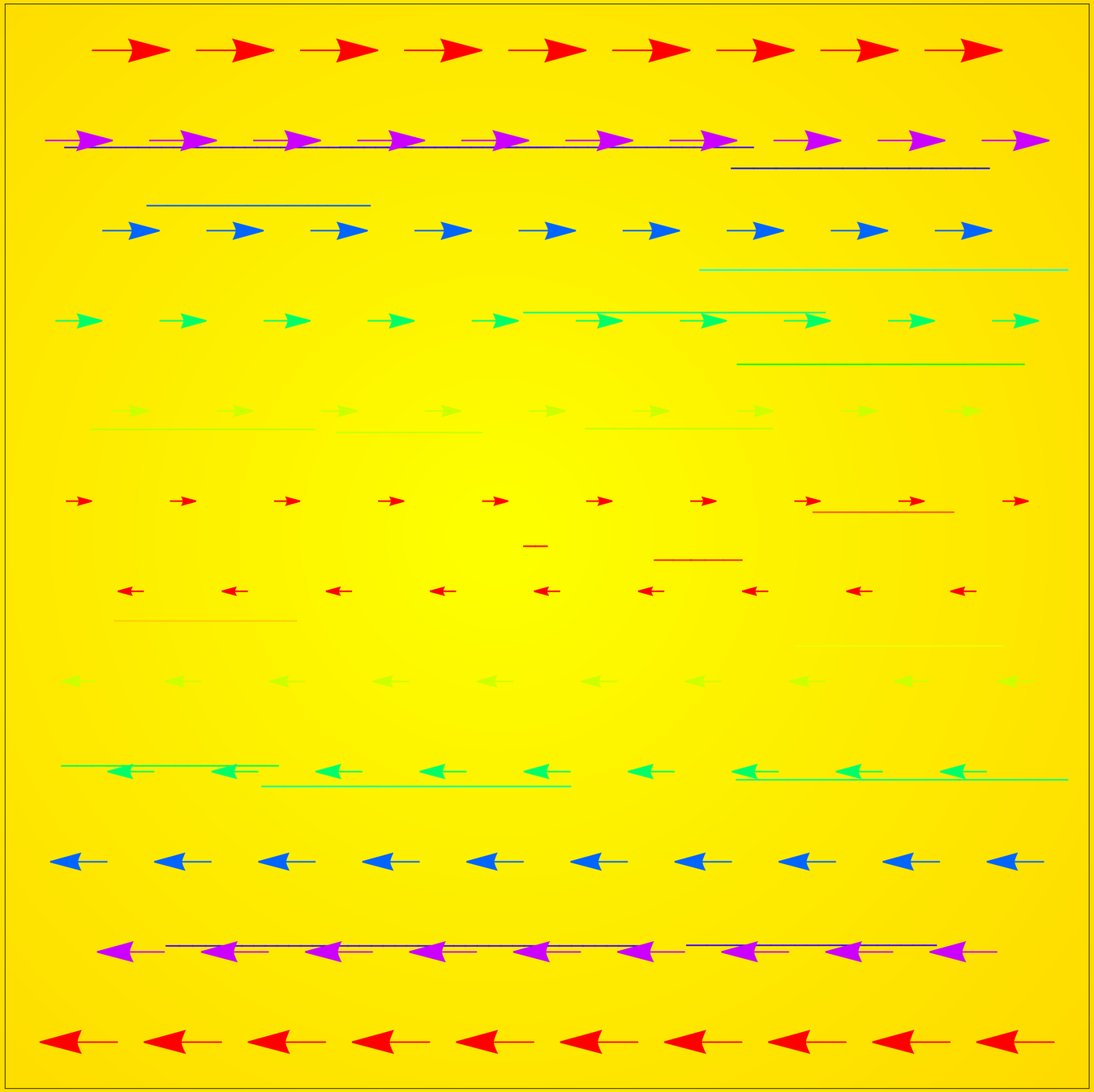

Wind Profiler - Xstation
Storm Motion - most current upload
SPOTTER NETLINK
• • • WXBS-NET LOGIN • • •
AutoSession
Interval
5min

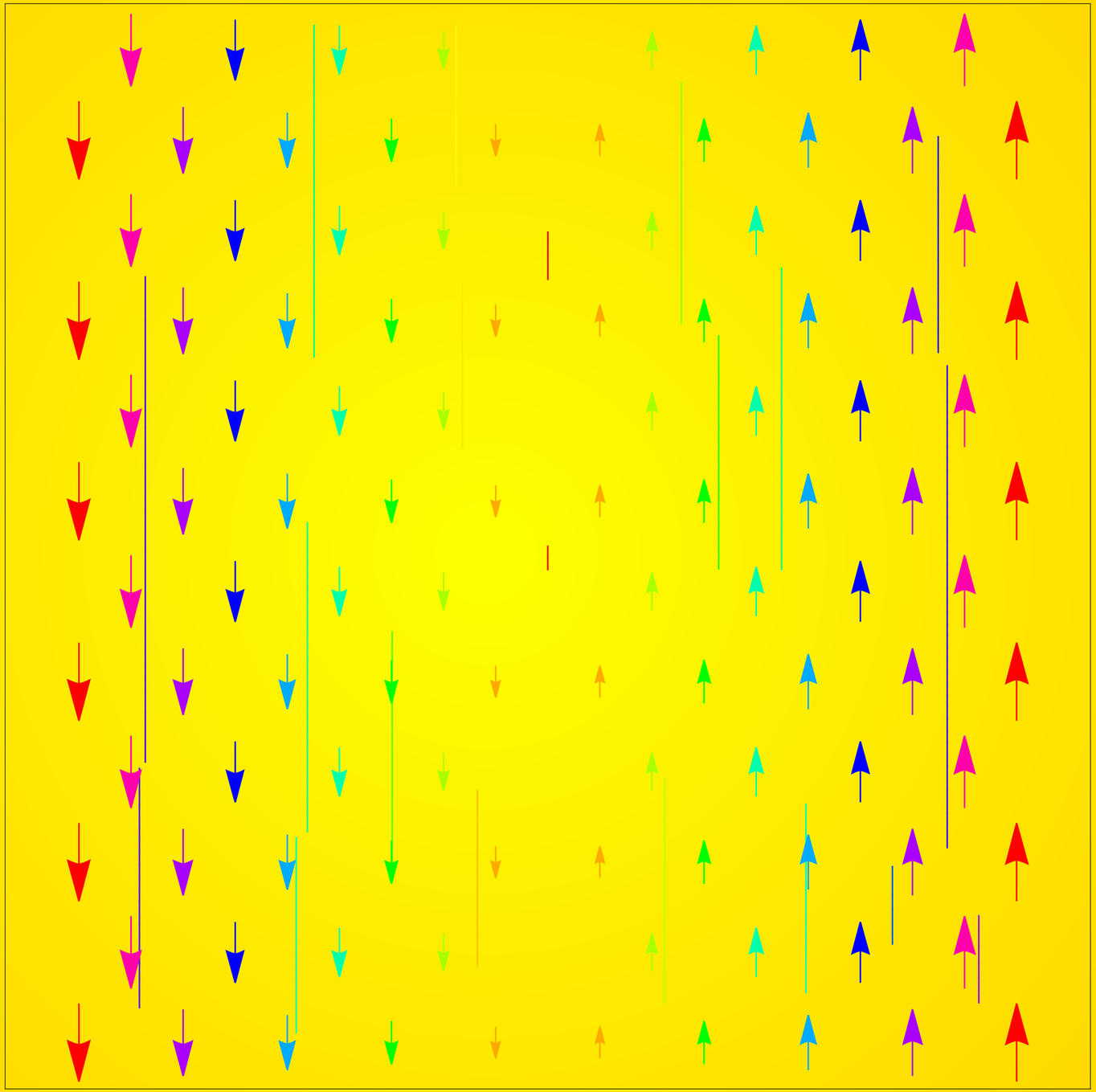
Wind Profiler - Xstation
Storm Motion - latest current update
SPOTTER NETLINK
• • • WXBS-NET LOGIN • • •
AutoSession
Interval: 5min

Basic Examples



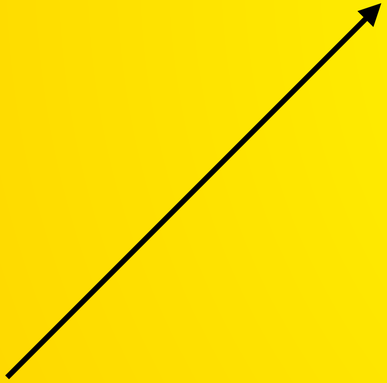




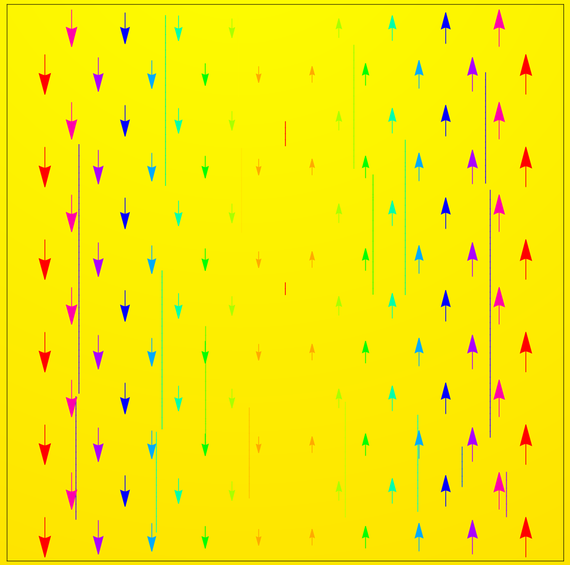


Curl

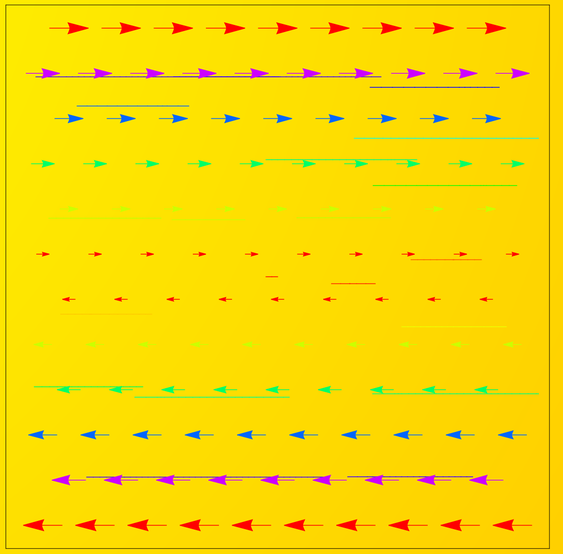
$$\text{curl}(\vec{F}) = Q_x - P_y$$

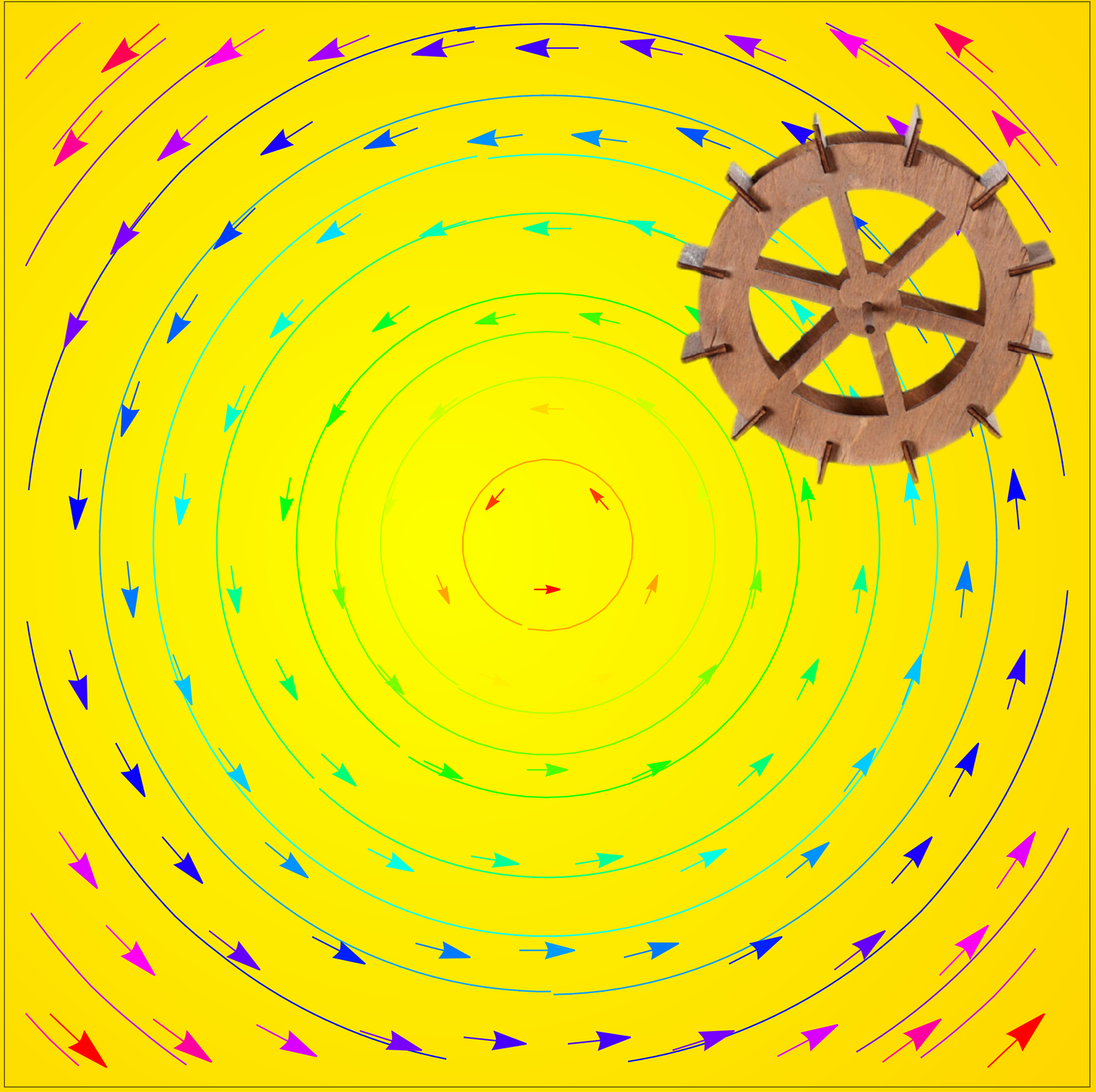


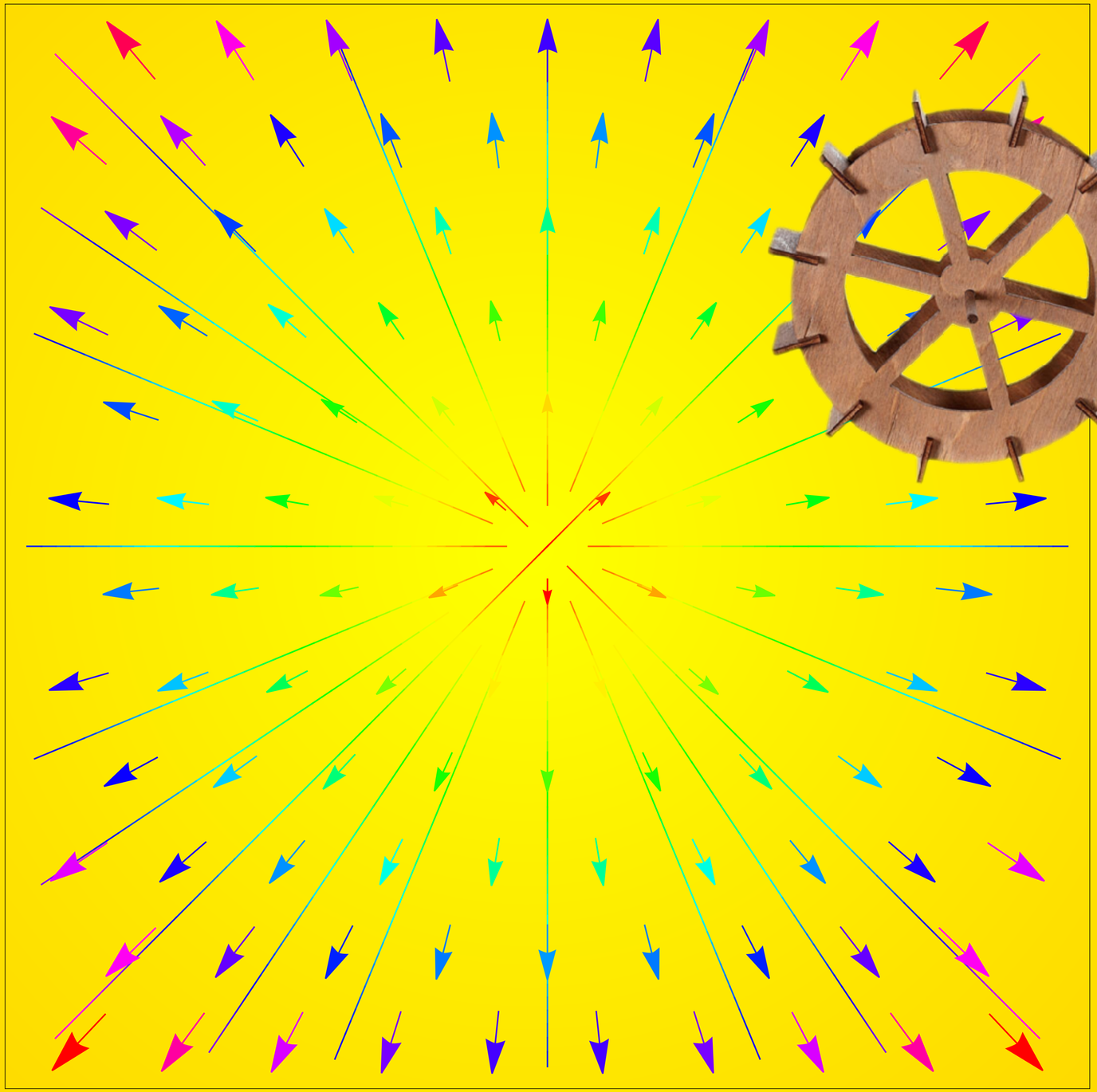
Vertical Shear

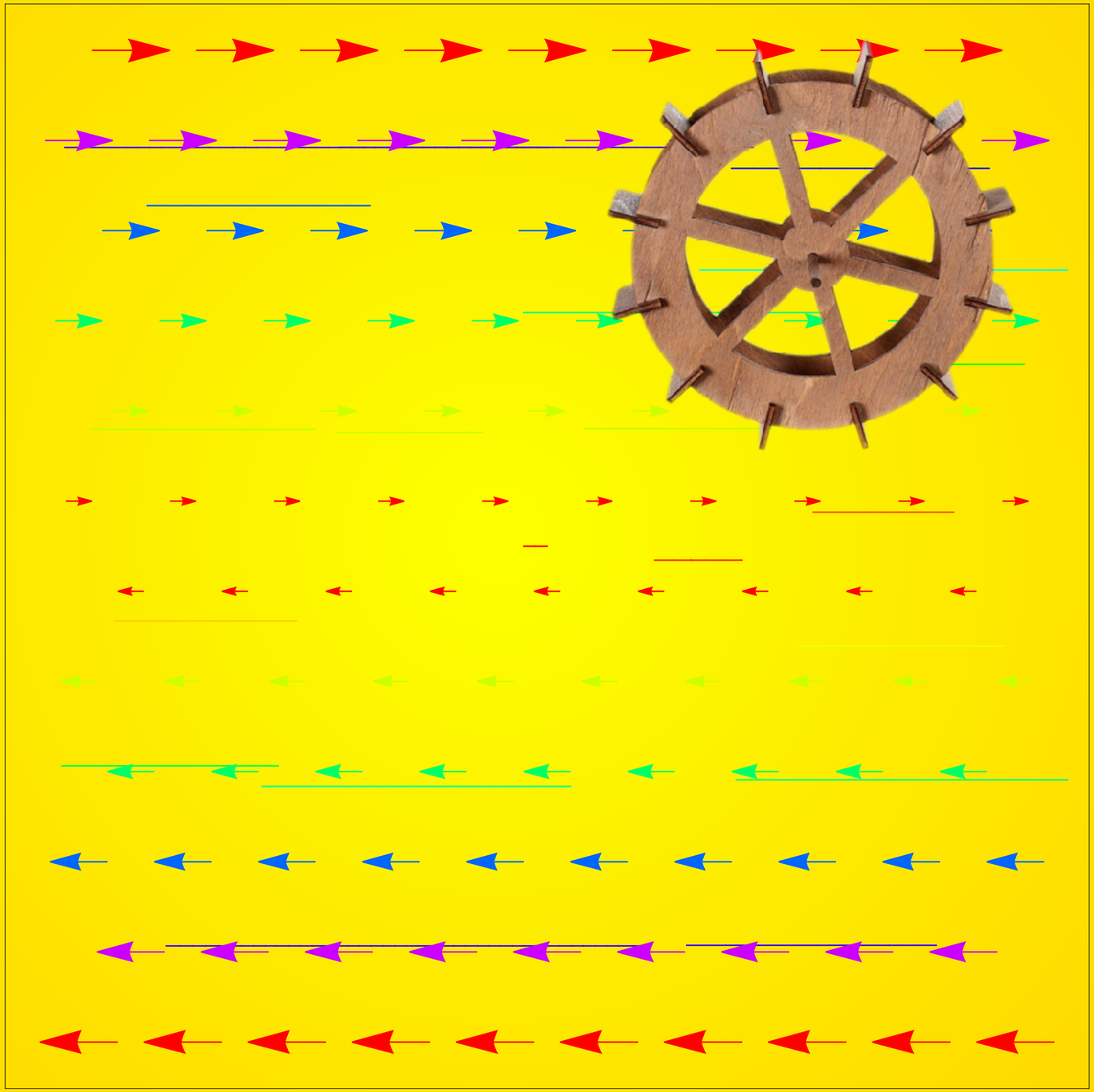


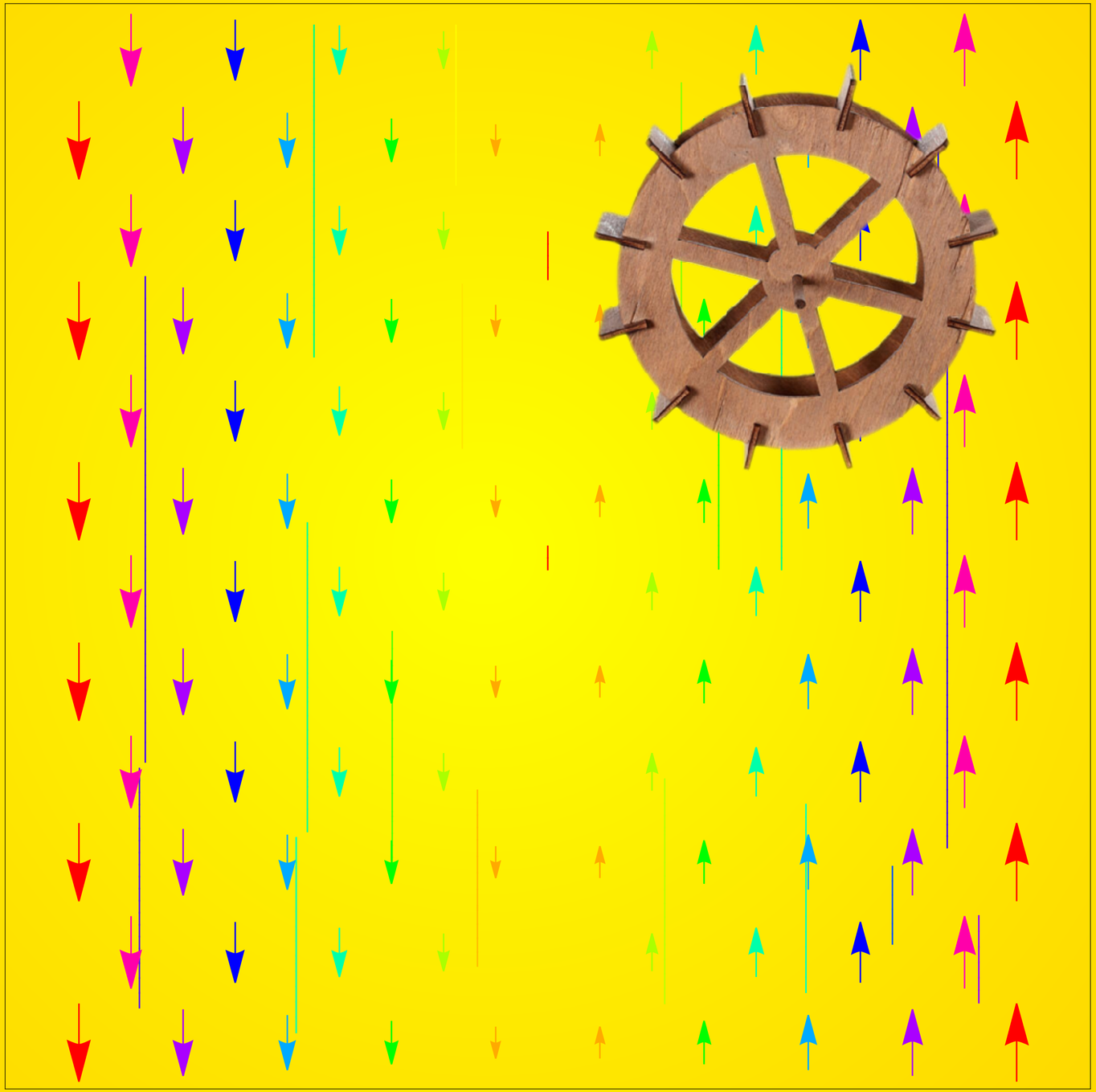
Horizontal Shear

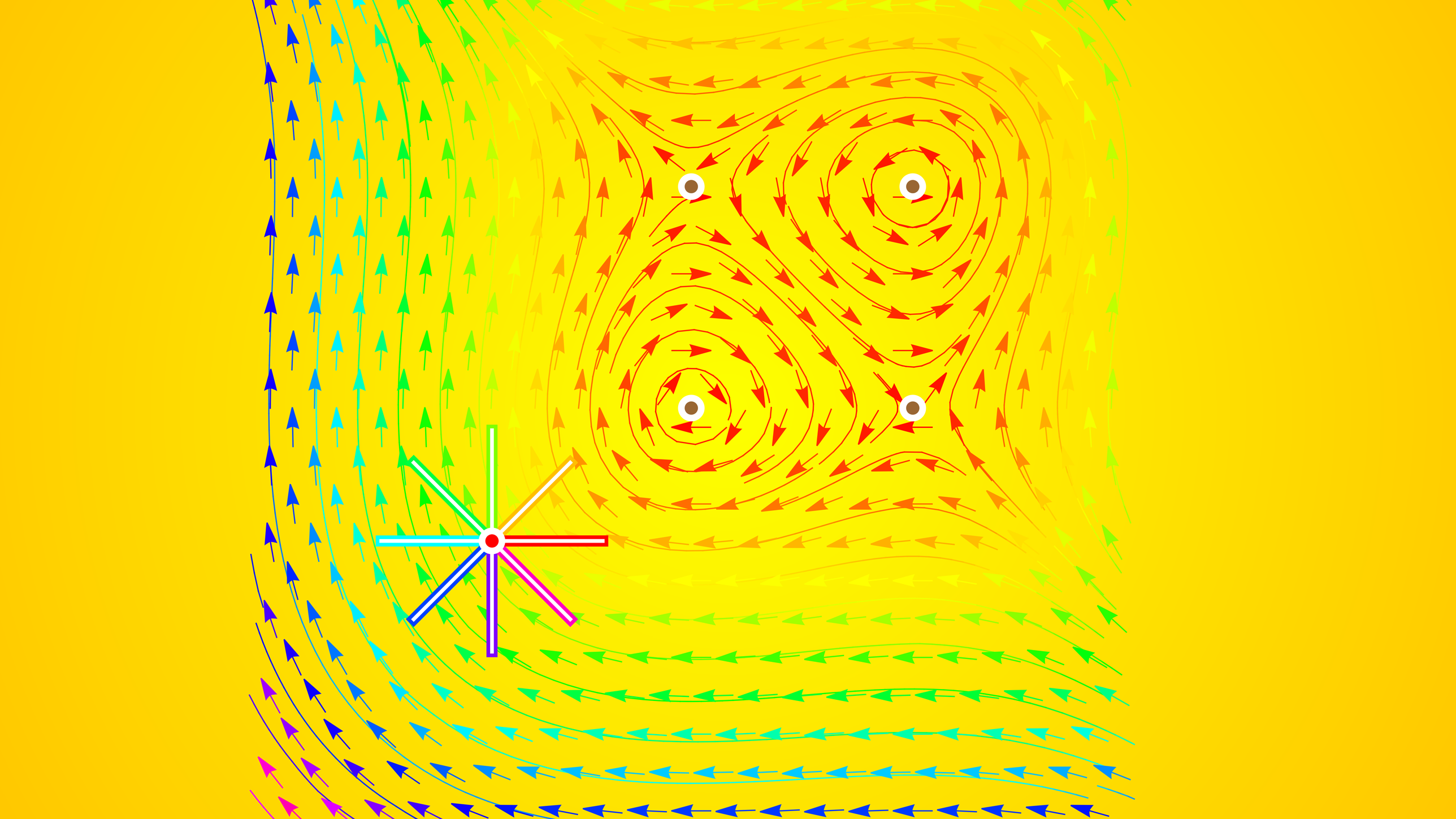












Applet from 2004!

PITF project

Exploring Vectorfields,

Curl and Divergence using Flash

Project leader:
Oliver Knill
Harvard University
Department of Mathematics
One Oxford Street
Cambridge, MA 02138, USA
Tel: (617) 495 5549
Email: knill@math

home | Earlier versions: 2D fields | 2D anim | 3D fields | 2D curl | 2D div | wheel 1 | wheel 2 | 3D curl

Programs: 2D curl/div | 3D curl/div | Surface demo | Sound demo | Vector demo | To Do | Download (gziped tar ball)

Presidential fellow:
David Drew Mahfouda
mahfouda@fas

Curl and Divergence in two dimensions (sound demo)

Direct link to SWF file (black background

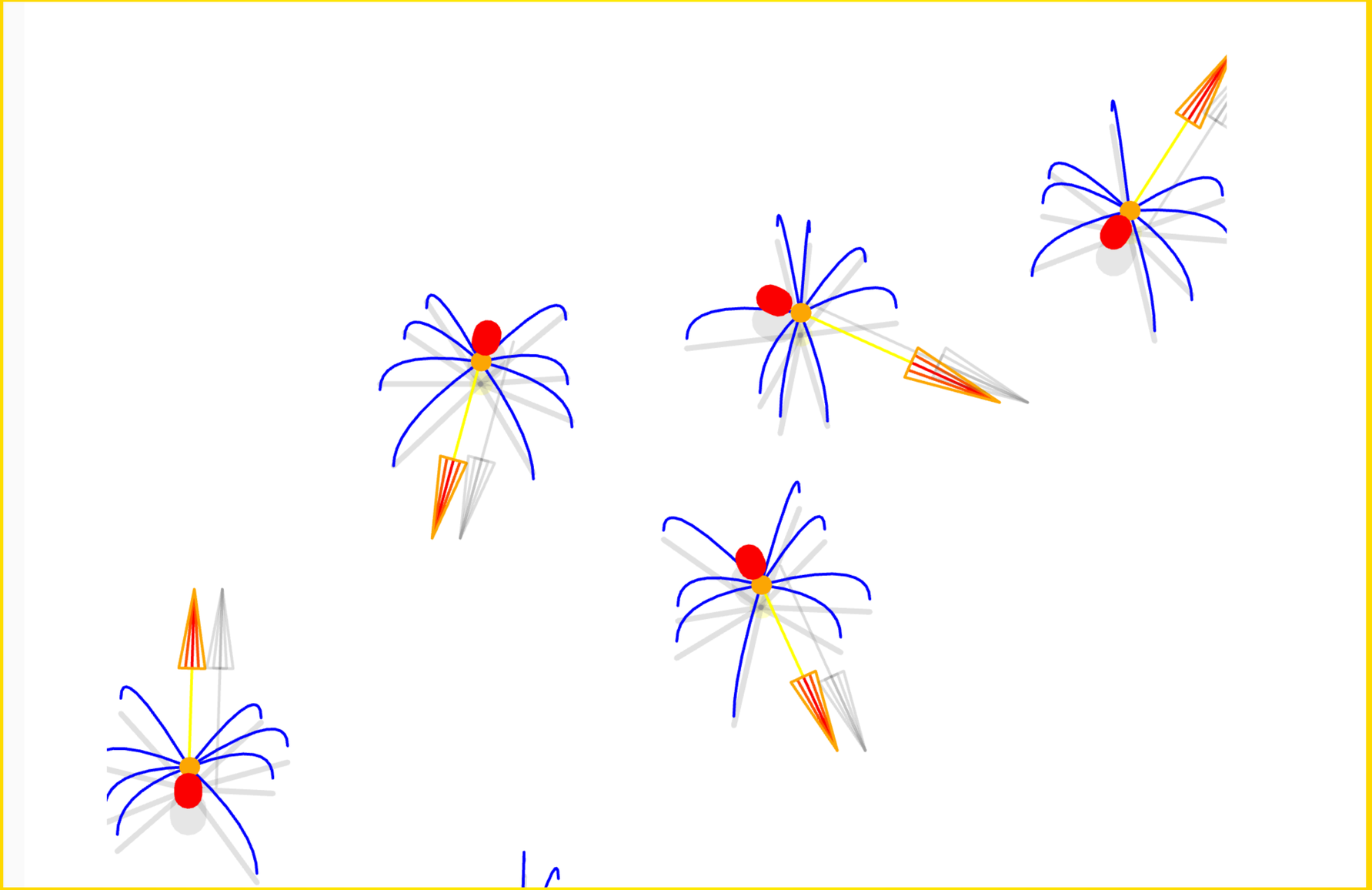
Usage: d key: switch to divergence, **c key:** switch to curl,

Download: FLA, Actionscript, SWF

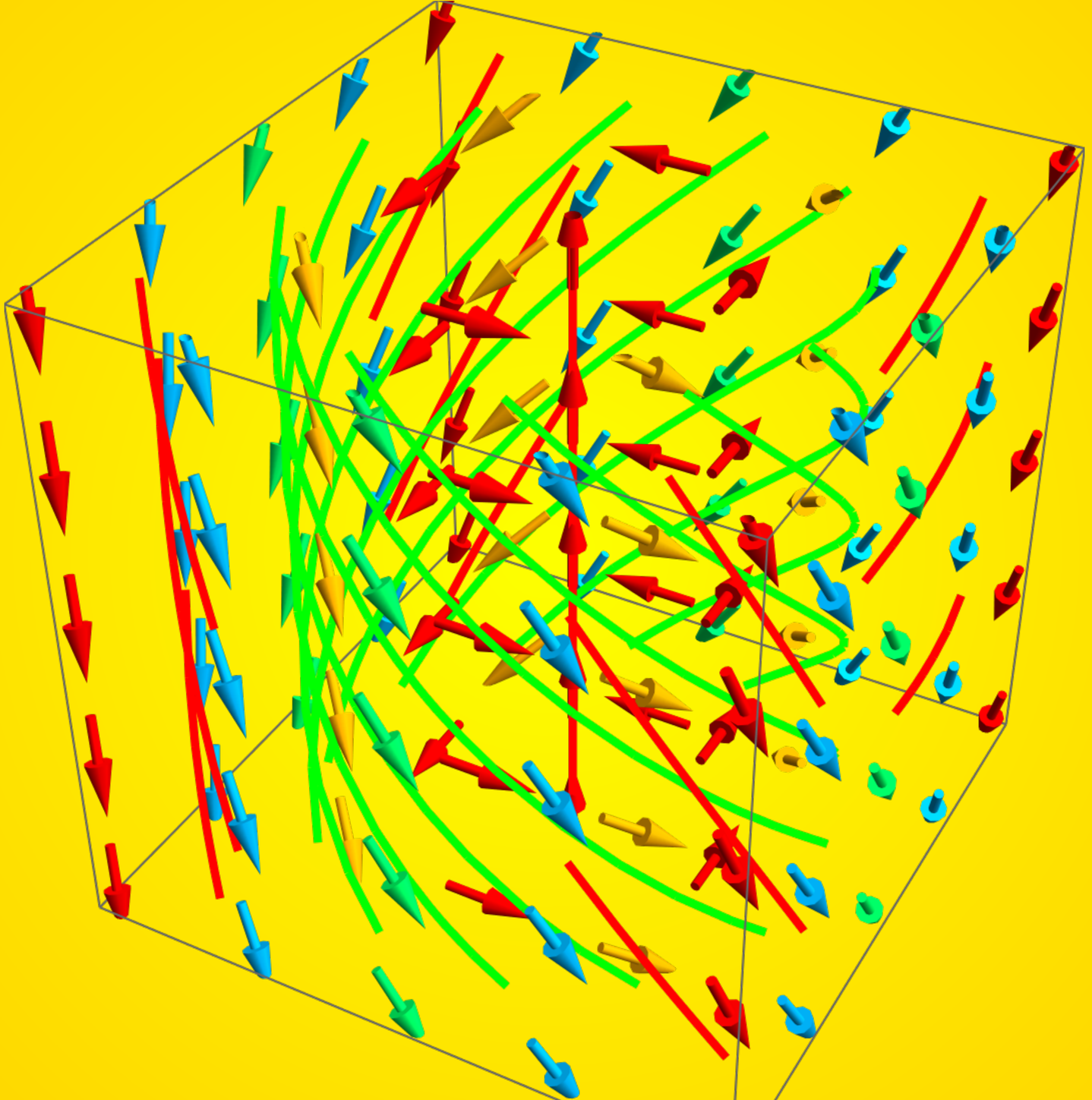
Text: Proposal, Notations

This is a test to demonstrate inclusion of sound.

https://people.math.harvard.edu/~knill/pitf/2dcurldiv.html



3D Vectorfields

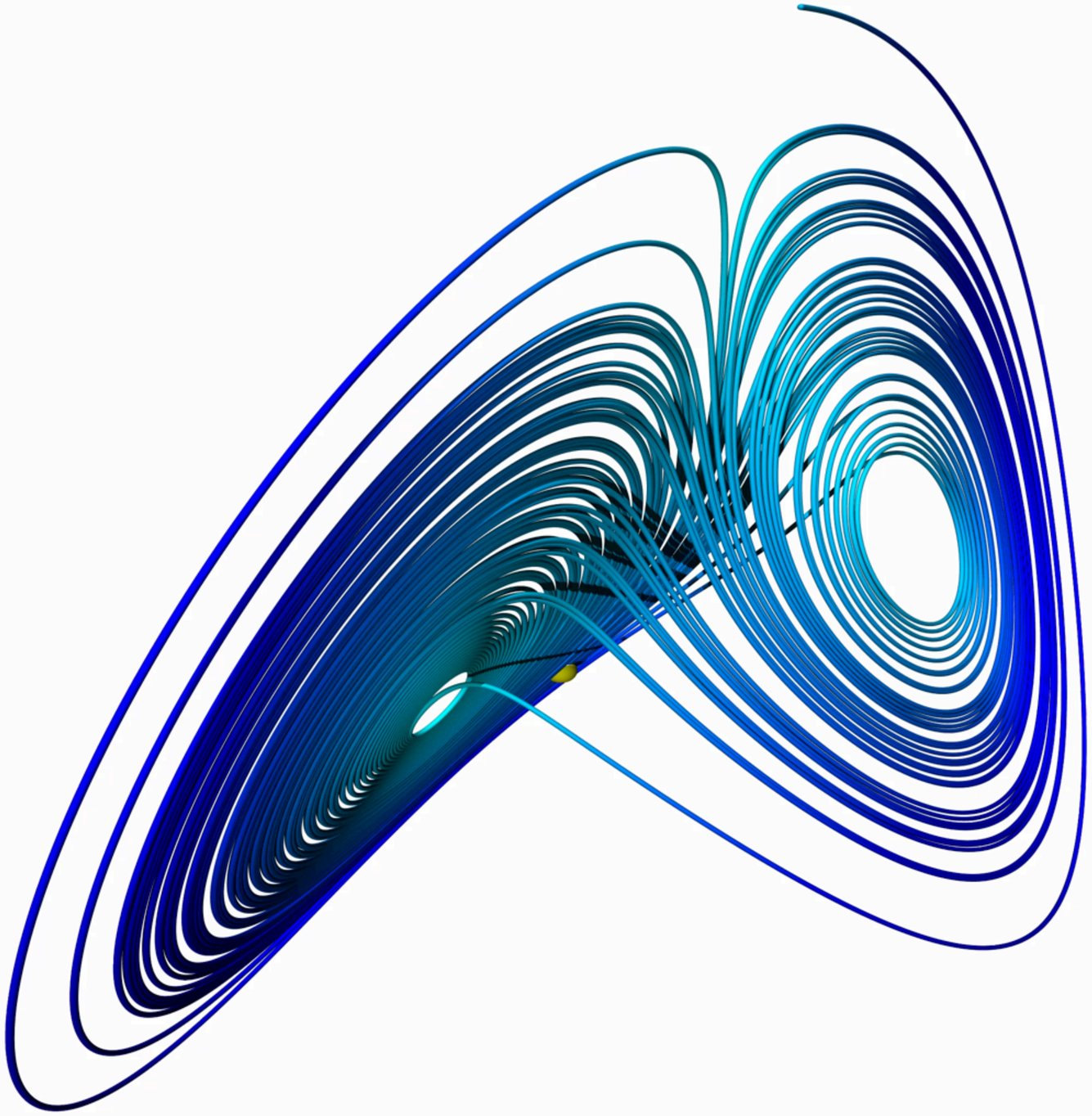


LOAD
93.74.09
27.69.50

Twister

GORSH
HELD

Fluid Dynamics



THE END