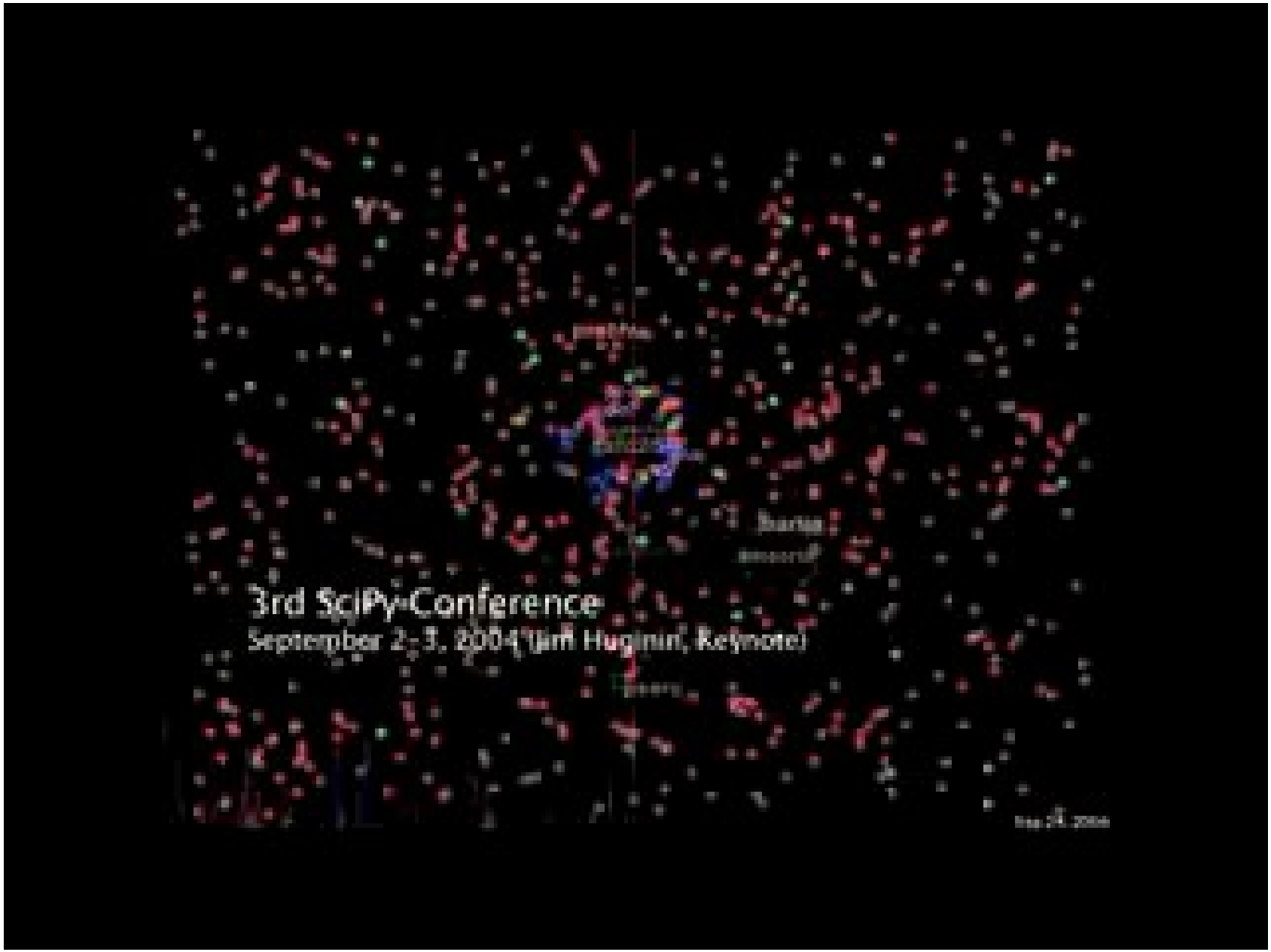
Py4Science @ UND

IP[y]:

matplotlib


3rd SciPy Conference
September 2-3, 2004 (Jim Hugunin, Keynote)

All-in-One

Python for Scientists

Enthought Python Distribution

Open-source Mathematics Software

- Free and open-source
- Object-oriented
- Batteries included
- Dynamic data-types
- Google, NASA, NCAR, NOAA uses
- "*Every pixel counts*"

Resources 1

- What is Python? by Wesley Chun
- Python 101 and 102 @ PyCon 2009
- An Introduction to OO Programming - PyCon 2009
- Python 401: Some Advanced Topics @ PyCon 2009
- Learning Python... with Videos (ShowMeDo.com)

IP[y]:

- Enhanced interactive Python shell
- Numbered inputs / outputs
- Dynamic object introspection
- TAB completion
- System shell interaction
- Hides complexity
- Pydee...

NumPy:

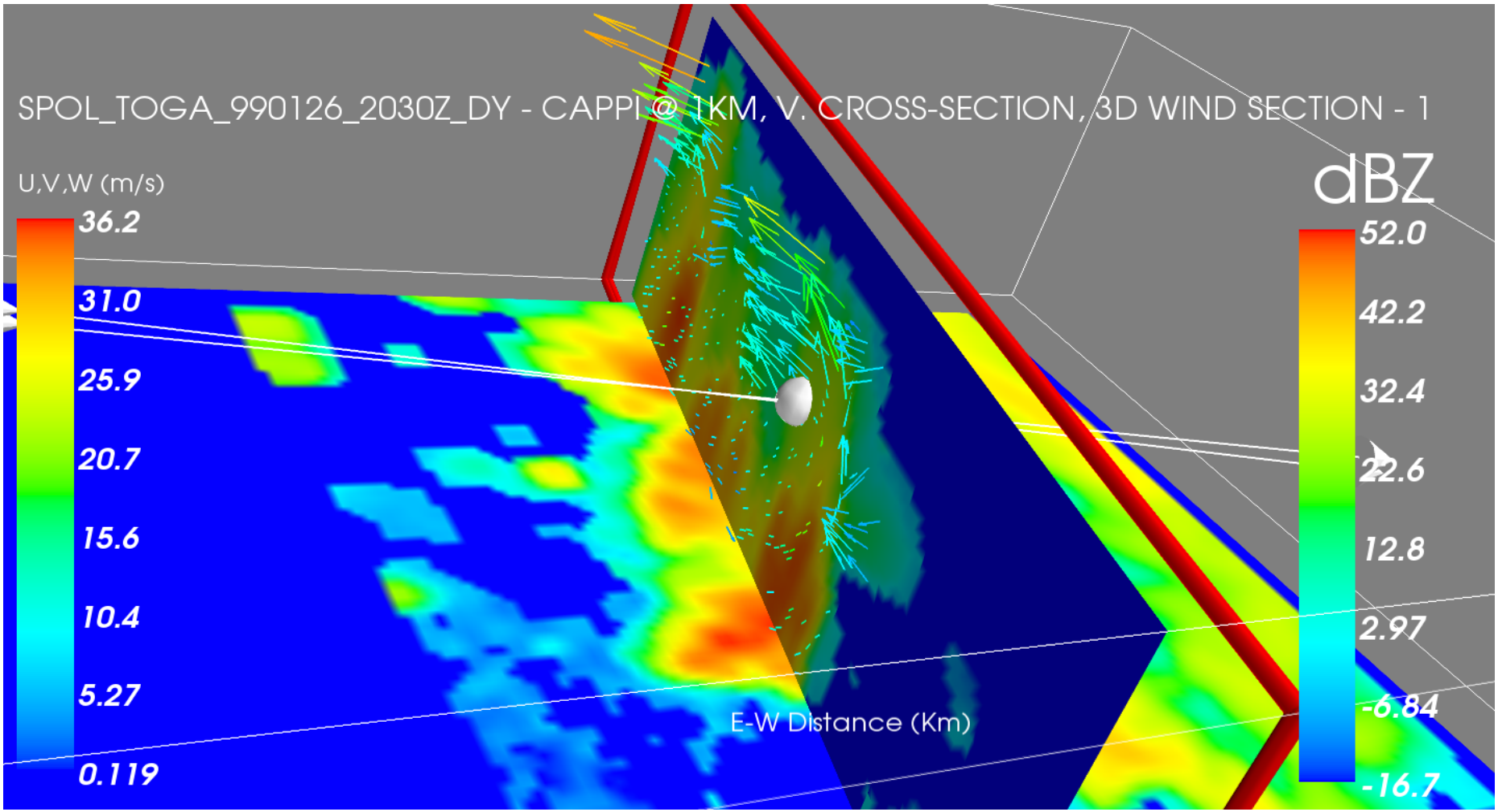
- Multidimensional arrays in Python
- Lots of functions to operate on arrays
- Core of Py4Science

SciPy:

- Library of scientific and eng functions
- Signal processing, statistics...
- Home for Py4Science

- 2D Visualization interface for Python
- Publication-quality plots
- Embeddable equations
- Large amounts of example code
- On-going 3D plotting functionality
- Great community support

- An aesthetic view to 3D
- Via scripting and GUI



Resources 2

- Scientific Computing with Python - 2004
- Python for Scientists Workshop - 2008
- A Demonstration of the 'IPython' Interactive Shell
- Matplotlib by John D. Hunter
- Scientific Computing in Python by Enthought

What's more?

- Scripting for Open Office, GIMP
- SymPy
- C/C++, Fortran code wrapping
- Parallel processing
- PyCUDA
- NetCDF3-4, HDF4-5 accessibility

Lottery Time

```
import random

lucky = {1:'Lucky1',...}

random.choice(lucky.keys())
```