PY410 / 505
Computational Physics 1

Salvatore Rappoccio

Array programming

- Now, we're able to get around one of the major limitations of python: for loops
  - Very, very slow! Avoid them at all costs!

numpy instead!

Array programming

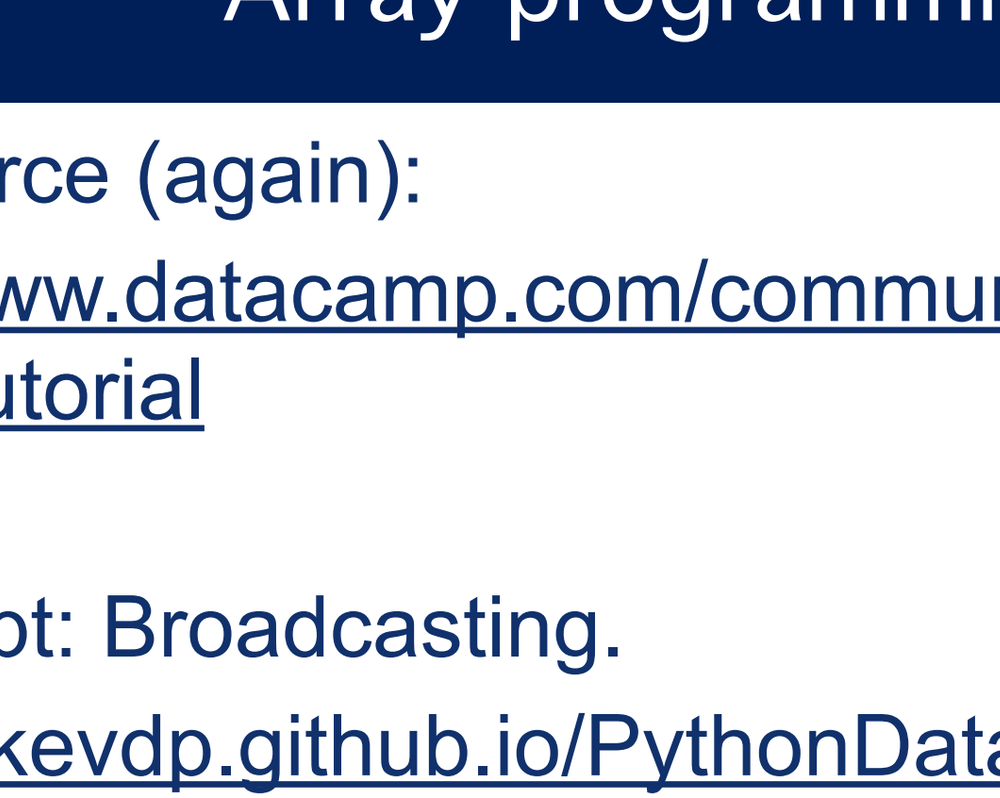
- Why is numpy okay to use for performance?
  - It's written in C++ and you just use python as an interface!
  - Deeply vectorizing the loops in the C++ module!

- So, just make everything look like an array operation!
  - This looks more like excel sheet programming psychologically. Think of it like that.

Array programming

- Nice resource (again):
  - https://www.datacamp.com/community/tutorials/python-numpy-tutorial

- Key concept: Broadcasting.
  - https://jakevdp.github.io/PythonDataScienceHandbook/02.05-computation-on-arrays-broadcasting.html



Array Programming

- Let’s do this in jupyter again:

- “ArrayProgramming/ArrayProgramming.ipynb”