CS 565 – Scientific Computing

Dr. Adriano Cavalcanti

PhD MABE, MS EE, BSc CSc

Computational Nanotechnology & Biomed Robotics

COMPUTER SCIENCE
CENTRAL WASHINGTON UNIVERSITY

Office location: SAMU216D - Phone 509-963-2063

Email: adriano.cavalcanti@cwu.edu

Office hours:
Mon 1PM-2PM; Mon 2PM-3PM; Wed 1PM-2PM; Or by appointment

Activity 1

Activity

spyder

CODE for FUN

matplotlib

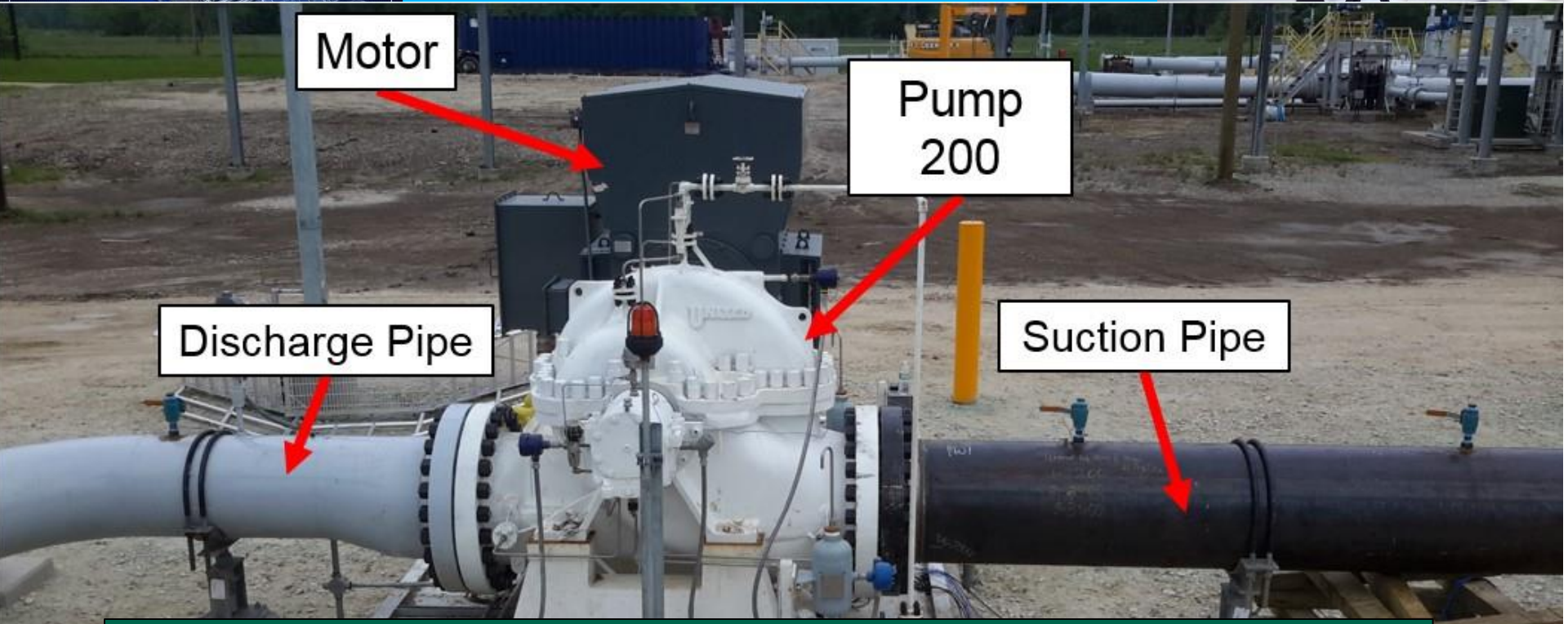
SciPy

NumPy

ANACONDA®

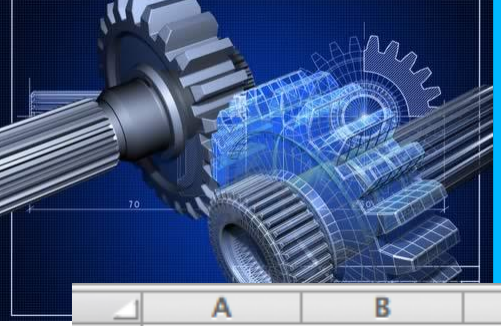
PC

Applied Sci-Computing



Fitting a Pump Curve

Consider a data set from a manufacturer. We can use a function to fit polynomials to the data. Extract the polynomial coefficients for later use.



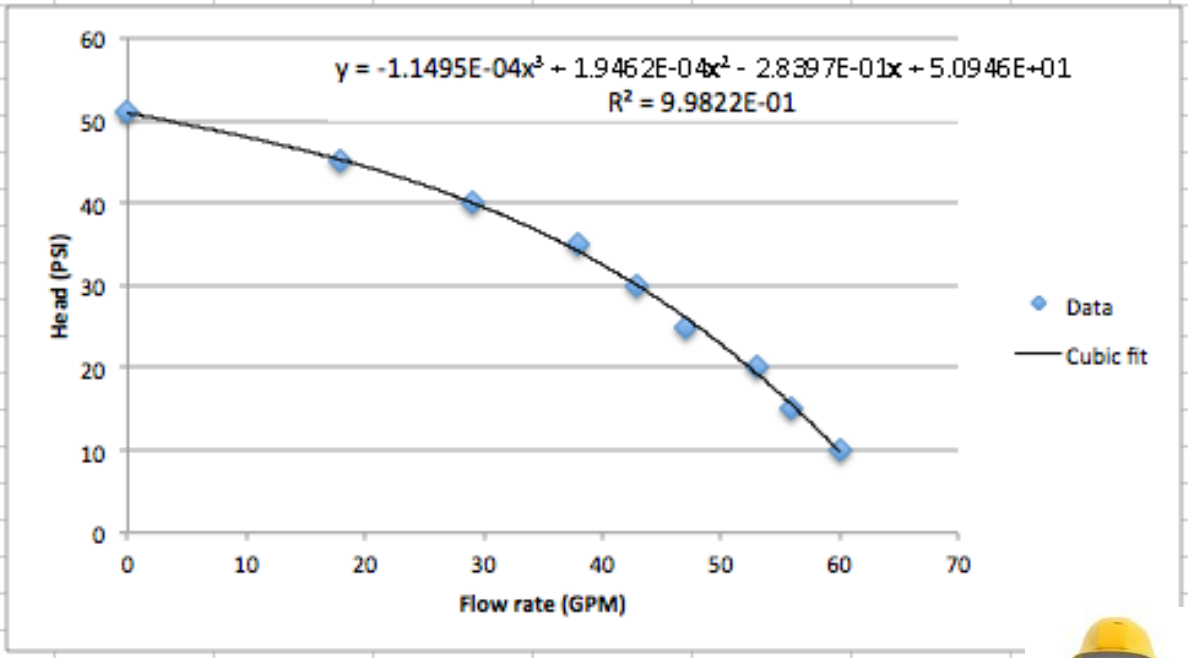
Applied Sci-Computing

Pump curve for Goulds GT10

Grainger Catalog, Part Number 1N440 (Catalog 401, November 2010)

http://www.grainger.com/Grainger/GOULDS-Centrifugal-Pump-1N440

Q (GPM)	h (psi)
60	10
56	15
53	20
47	25
43	30
38	35
29	40
18	45
0	51



Cubic polynomial coefficients

1	-1.1495E-04
2	1.9462E-04
3	-2.8397E-01
4	5.0946E+01
R2	9.9822E-01

Activity

Fitting a Pump Curve

Using the discussed example, perform the following steps:

1) Demonstrate you setup the environment to run Sci-Comp using Spyder (3 points)
2) Demonstrate you also setup the environment to run Sci-Comp on PyCharm (3 points)
3) Fit the Pump Curve to the provided data, read it from a file. (4 points)