NumPy theory

Max Cotton

1 Array

- Use numpy arrays for numpy processes
- The ”shape” attribute of a numpy array returns a tuple of the shape of the array, with the first index being the number of arrays in the 2D array and the second being the number of items in each array
- The ”T” attribute of a numpy array shows the transpose of the array (How it acts as a matrice)

2 Functions

- numpy.random.rand(d0,d1) generates a numpy array with a shape of (d0,d1) with random values
- numpy.expr(-z) returns e^{-z}
- numpy.log() is the natural logarithm (e is the base)
- numpy.dot(array1,array2) returns the dot product of two arrays
- numpy.reshape(array, shape) reshapes an array without changing its contents
- numpy.sum(array) returns the sum of all elements in the array
- numpy.squeeze() returns an array with the same data but reshaped so dimensions of length one are removed