import statistics as statistics

import numpy as np

from uncertainties import unumpy

from uncertainties import ufloat

from uncertainties.umath import \*

Eddington = ufloat(1.61, 0.40)

Crommelin = ufloat(1.98, 0.16)

print('Eddington value ', Eddington)

print('Crommelin value ', Crommelin)

Priorodds = Eddington/Crommelin

print('The value of prior odds = ', Priorodds)

PH1givenD = 1.74

PH0givenD = 0.87

Posteriorodds = PH1givenD/PH0givenD

print( 'The value of posterior odds, ', Posteriorodds)

Bayesfactor = Posteriorodds/Priorodds

print('the value of Bayes factor is ', Bayesfactor)

Eddington value 1.6+/-0.4

Crommelin value 1.98+/-0.16

The value of prior odds = 0.81+/-0.21

The value of posterior odds, 2.0

the value of Bayes factor is 2.5+/-0.6