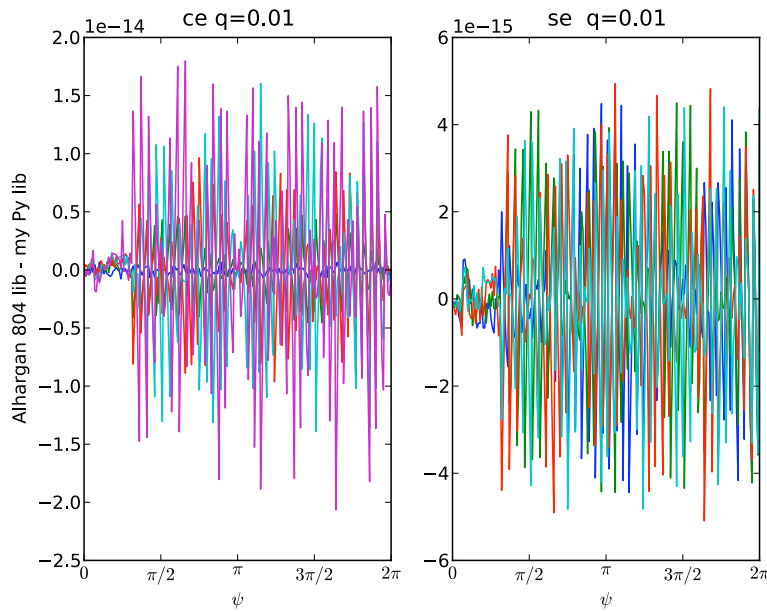
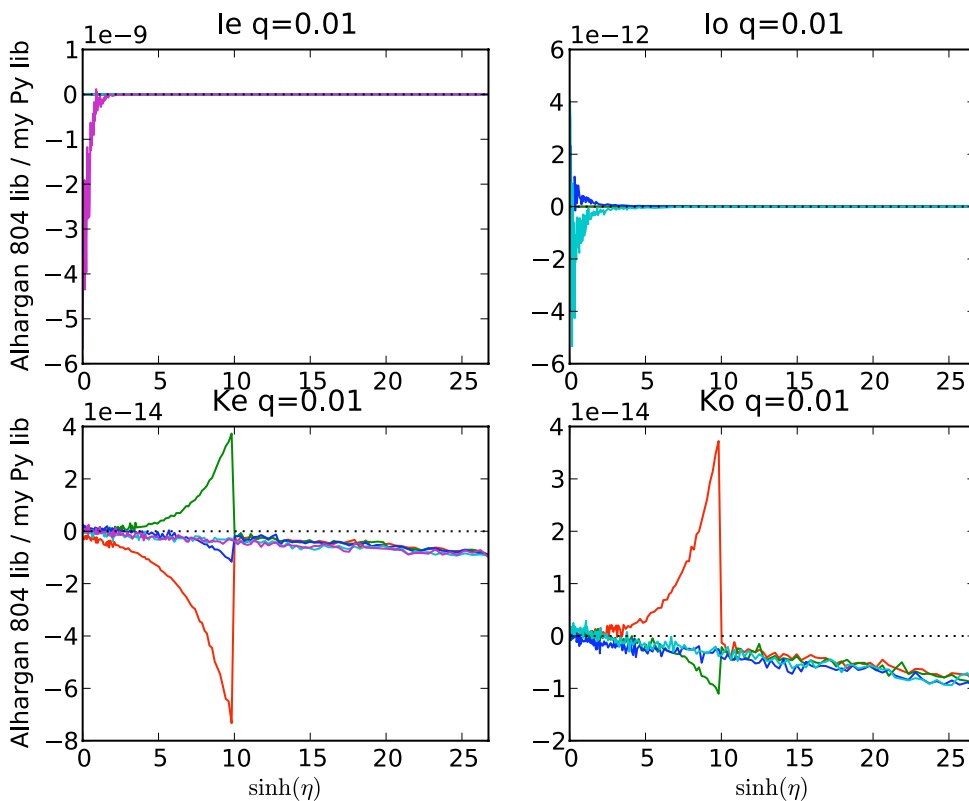


Shown here for small values of the Mathieu parameter (nearly circular – almost sines, cosines, and Bessel functions), the modified Mathieu functions are compared with a published reference C++ algorithm (that uses a different approach to computing the characteristic numbers, and uses different Bessel function libraries). The angular functions have many zeros but are never much bigger than +/- 1.0, and are therefore compared by a difference.



*note the multiplier on the tops of the y-axes (1.0E-14 or 1.0E-15).*

The radial modified Mathieu functions vary over many orders of magnitude and therefore the  $\log_{10}(\text{abs}(\text{ratio}))$  of the reference solution to the Python library solution are plotted (dotted line is exact 1:1)



*also note the multipliers on the tops of the y-axes (which here represent the  $\log_{10}(\text{abs}(\text{ratio}))$ , not the difference)*

The same results as the previous page, but for larger Mathieu parameter (very elliptical)

