To plot

The basics are calculated

- -cosine   CalCos.txt
- Inverted triangle   CalIVTrig.txt
- FM   CalFM.txt
- Zero   zero.txt

SImulated

- The residual   SimCaldiff.txt
- Quaternion full   SimCos.txt ok
- Inverted triangle   SimIVTrig.txt ok
- FM   SimFM.txt ok
- RawData   RawData.txt ok
- FM-Sine Fit   FMSin.txt ok
- QMvsQUAT   QMvsQUAT.txt ok

The basic plot for correlations:

set xrange [0:360]
set yrange [-1:1.1]
set xtics 45
set sample 400
set title "Correlation" font ",12"
set xlabel "(a − b)" font ",12"

The basic plot

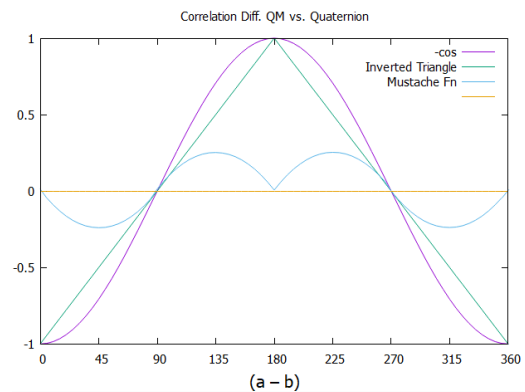
set xrange [0:360]
set xtics 45
set sample 400
set xlabel "(a − b)" font ",12"

'c:/g77/bin/CalCos.txt' using 1:2 with line title '-cos','c:/g77/bin/CalIVTrig.txt' using 1:2 with line title 'Triangle','c:/g77/bin/CalFM.txt' using 1:2 with line title 'Mustache Fn', 'c:/g77/bin/zero.txt' using 1:2 with line title ' '

Figure 2 title EPR correlation from polarization

set xrange [0:360]
set yrange [-1:1.1]
set xtics 45
set ytics .5
set sample 400

set xlabel "(a – b)" font ",12"
set title "Quaternion Polarization" font ",12"

plot 'c:/g77/bin/SimIVTrig.txt' using 1:2 with linespoint title *'Polarization CHSH =2.027','c:/g77/bin/CalCos.txt' using 1:2 with line title '-cos','c:/g77/bin/CalIVTrig.txt' using 1:2 with line title 'Triangle','c:/g77/bin/CalFM.txt' using 1:2 with line title 'Mustache Fn', 'c:/g77/bin/zero.txt' using 1:2 with line title ' '*

Triangle','c:/g77/bin/SimFM.txt' using 1:2 with line title 'Mustache Fn', 'c:/g77/bin/zero.txt' using 1:2 with line title ' '

Figure 3 title Quaternion residual correlation

set xtics 45
set sample 400
set xlabel "(a – b)" font ",12"
set xrange [45:135]
set yrange [-.25:.25]

set title "Residual correlation"

plot 'c:/g77/bin/SimIVTrig.txt' using 1:2 with line title 'Residual correlation CHSH=0.027','c:/g77/bin/CalIVTrig.txt' using 1:2 with line title 'Triangle'*,'c:/g77/bin/zero.txt' using 1:2 with line title ' '*

Figure 3 (insert) title Coherence from polarization

set xtics 45
set ytics .01
set sample 400
set xlabel "(a – b)" font ",12"
set xrange [0:360]
set yrange [-.02:.02]

set title "Residual correlation"

plot 'c:/g77/bin/SimCaldiff.txt' using 1:2 with linespoint title 'Residual correlation CHSH = 0.027'*,'c:/g77/bin/zero.txt' using 1:2 with line title ' '*

Figure 4 title EPR correlation from coherence

set xtics 45
set sample 400
set xlabel "(a – b)" font ",12"
set xrange [0:360]
set yrange [-1.:1.1]

set title "Quaternion Coherence"

plot 'c:/g77/bin/SimFM.txt' using 1:2 with linespoint title 'Coherence CHSH = 0.968', *'c:/g77/bin/CalCos.txt' using 1:2 with line title '-cos','c:/g77/bin/CalIVTrig.txt' using 1:2 with line title 'Triangle','c:/g77/bin/CalFM.txt' using 1:2 with line title 'Mustache Fn', 'c:/g77/bin/zero.txt' using 1:2 with line title ' '*

Figure 5 EPR correlation: Full

set xtics 45
set sample 400
set xlabel "(a − b)" font ",12"
set xrange [0:360]
set yrange [-1.:1.1]
set title " EPR correlation: Full "

plot 'c:/g77/bin/SimCos.txt' using 1:2 with linespoint title 'Full correlation CHSH = 2.995','c:/g77/bin/SimIVTrig.txt'
using 1:2 with linespoint title 'Polarization CHSH = 2.027','c:/g77/bin/SimFM.txt' using 1:2 with linespoint title
'Coherence CHSH = 0.968','c:/g77/bin/*SimCaldiff*.txt' using 1:2 with line title 'Residual coherence CHSH =
0.027',*'c:/g77/bin/CalCos.txt'using 1:2 with line title '-cos CHSH = 2.707','c:/g77/bin/CalIVTrig.txt' using 1:2 with
line title 'Triangle','c:/g77/bin/CalFM.txt' using 1:2 with line title 'Mustache Fn', 'c:/g77/bin/zero.txt' using 1:2 with
line title ' '*

Figure 6 title   Raw Data normalized

EQC   EQC.txt
NEQP   NEQP.txt
EQP   EQP.txt
NEQC   NEQC.txt

set xrange [0:360]
set yrange [0:1]
set xtics 45
set ytics .25
set sample 400
set xlabel "(a − b)" font ",12"

set title "Raw Data normalized"

plot 'c:/g77/bin/EQP.txt' using 1:2 with linespoint title 'EQP','c:/g77/bin/NEQP.txt' using 1:2 with linespoint title
'NEQP','c:/g77/bin/EQC.txt' using 1:2 with linespoint title 'EQC','c:/g77/bin/NEQC.txt' using 1:2 with linespoint title
'NEQC','c:/g77/bin/zero.txt' using 1:2 with line title ' '

'c:/g77/bin/EQP.txt' using 1:2 with linespoint title 'EQP'
'c:/g77/bin/NEQP.txt' using 1:2 with linespoint title 'NEQP'
'c:/g77/bin/EQC.txt' using 1:2 with linespoint title 'EQC'
'c:/g77/bin/NEQC.txt' using 1:2 with linespoint title NEQC'

Figure 6 title   Mustache vs. sin(2x)

set xrange [0:360]
set yrange [-.3:.3]
set xtics 45
set ytics .3

set sample 400
set xlabel "(a − b)" font ",12"
set title " Mustache vs. sin(2x)"

plot 'c:/g77/bin/SimFM.txt' using 1:2 with linespoint title 'Coherence CHSH=0.968','c:/g77/bin/FMSine.txt' using 1:2 with line title 'Sin2x','c:/g77/bin/zero.txt' using 1:2 with line title ' '

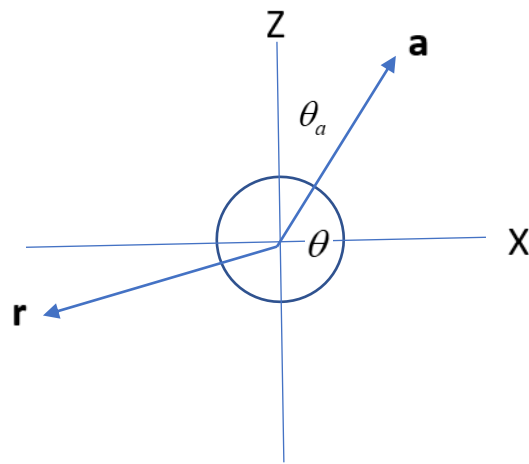
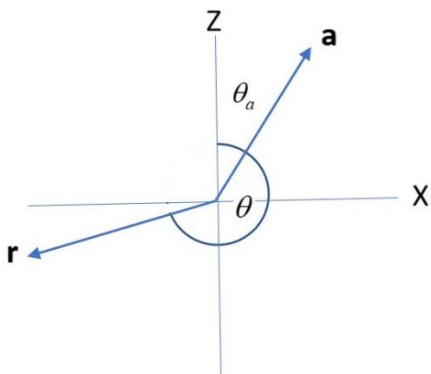
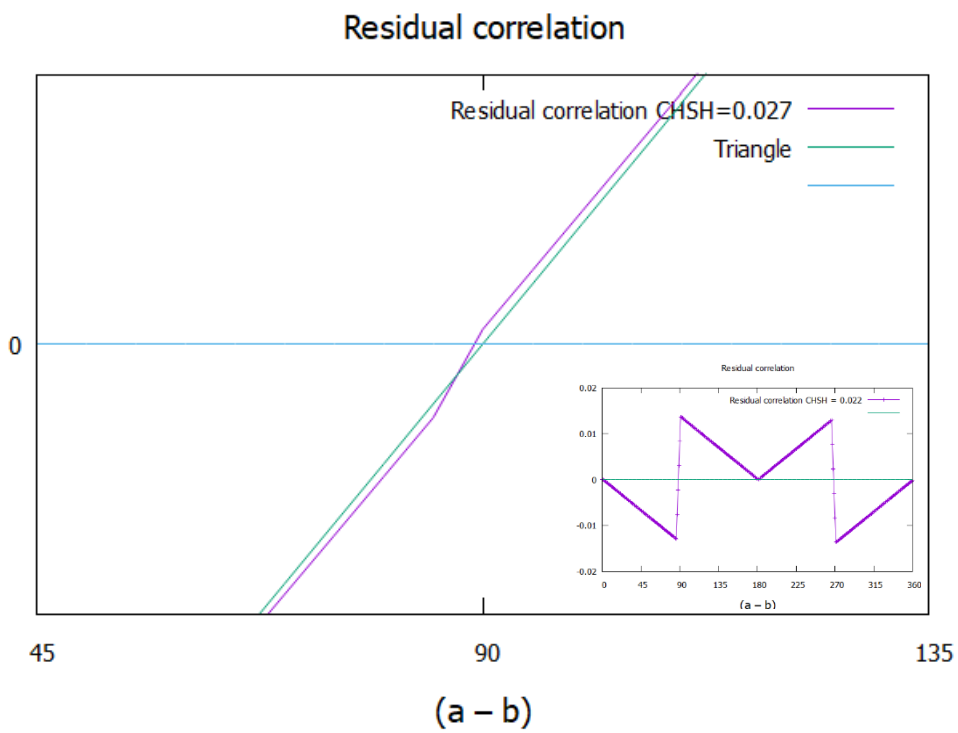
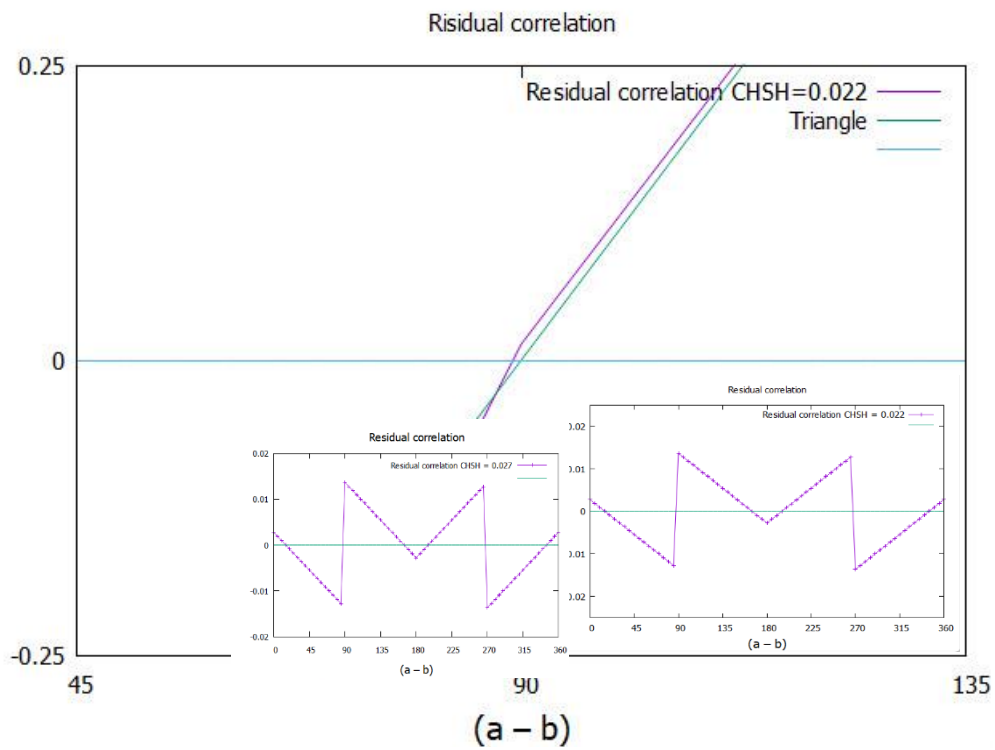
Figure 7 title Mixing polarization and coherence

Create the data from the parts in the excel sheet "Excel Plots.xls"

EQC + NEQP   EQCNEQPp.txt
EQC − NEQP   EQCNEQPm.txt
EQP + NEQC   EQPNEQCp.txt
EQP − NEQC   EQPNEQCm.txt

set xtics 45
set ytics .5
set sample 400
set xlabel "(a − b)" font ",12"
set xrange [0:360]
set yrange [-.5:1.5]
set title "Mix polarization and coherence"

plot 'c:/g77/bin/EQCNEQPp.txt' using 1:2 with linespoint title ' EQC + NEQP','c:/g77/bin/EQCNEQPm.txt' using 1:2 with linespoint title 'EQC − NEQP', 'c:/g77/bin/EQPNEQCp.txt' using 1:2 with linespoint title ' EQP + NEQC','c:/g77/bin/EQPNEQCm.txt' using 1:2 with linespoint title ' EQP − NEQC', 'c:/g77/bin/zero.txt' using 1:2 with line title ' '

Figure 9 title The Polarizer Plane

Risidual correlation

(a − b)

Residual correlation

(a − b)

Residual correlation

Installation
Issues
If no screen output is available in installation, try
sudo apt-get update
sudo apt-get install gnuplot-x11

Plot commands
Plotting column a against column b
plot "filename" using a:b with lines/points/ linecolor rgb "colour-name"
(a and b are column numbers)

plot "filename" using ($a/100):b ...

Key label for a particular line

plot ... title 'Plot-title'

Settings
Set the line style in following plot commands
set style data lines/points/
Set various labels in following plot commands
set title "plot-title" font ",12"
set xlabel "x-axis-label" font ",12"
set ylabel "y-axis-label" font ",12"
Label the lines in-situ in following plot command
set label 1 'text for label line 1'
Set aspect ratio for following plot command
set size ratio-x, ratio-y
(e.g. set size 1, 0.5 makes the plot half as high as wide)
or
set size ratio ratio-value
(e.g. set size ratio 0.5 does the same as the above)
Set tic details
set xtics delta-x font ",12"
Key
unset key

set key
set key bottom right
set key font ",24"

Output
set term postscript color
set output "filename.ps"

Short cuts

Define multiple line attributes
set style line line-number lt 2 lc rgb "colour-name" lw 2
lt=line type (1=continuous, 2=dashed, 3=dotted, 4=dot-dashed, 5=dot-dot-dashed)
lw=line width

Plot with
plot "file-name" ls line-number