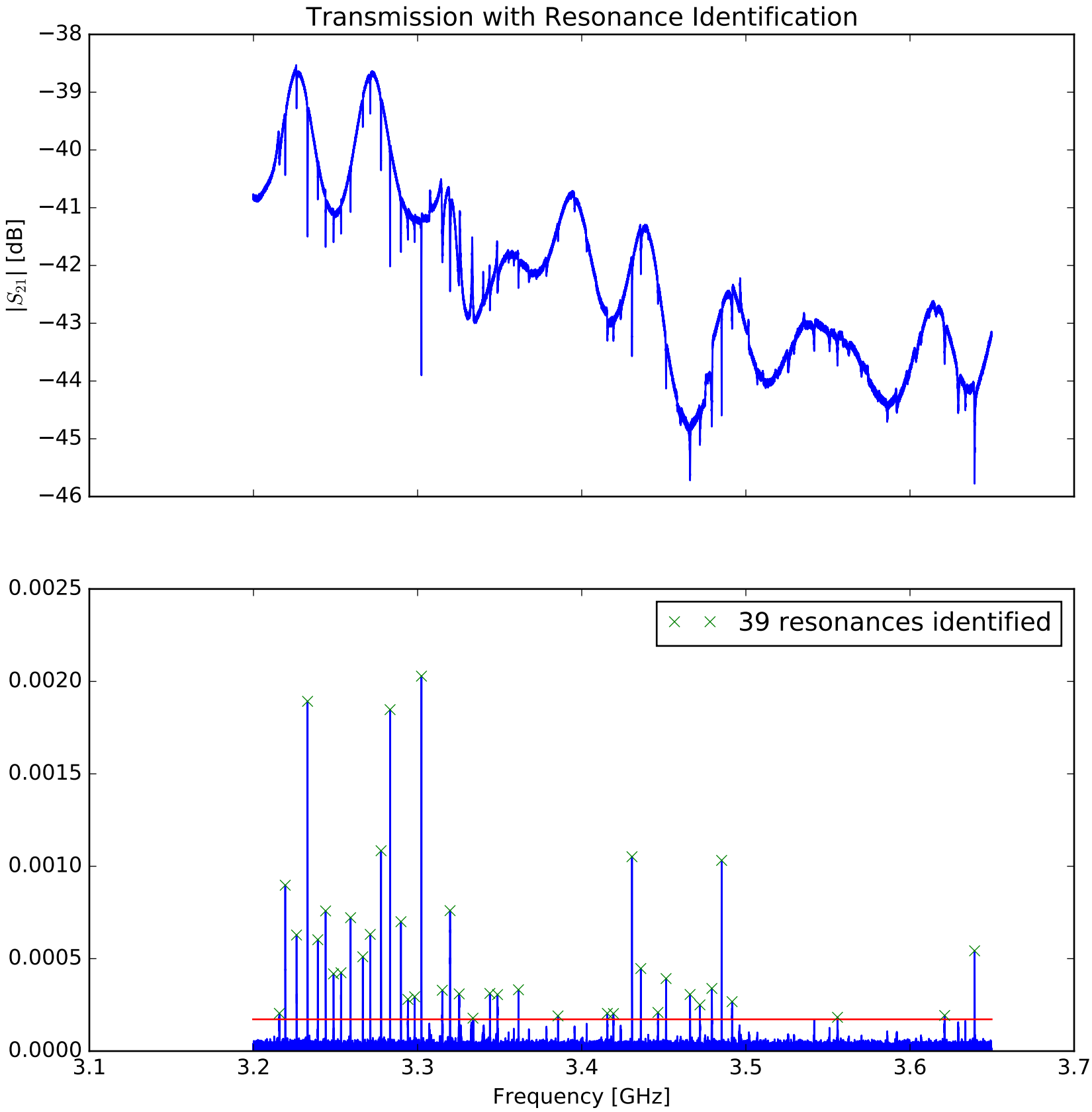
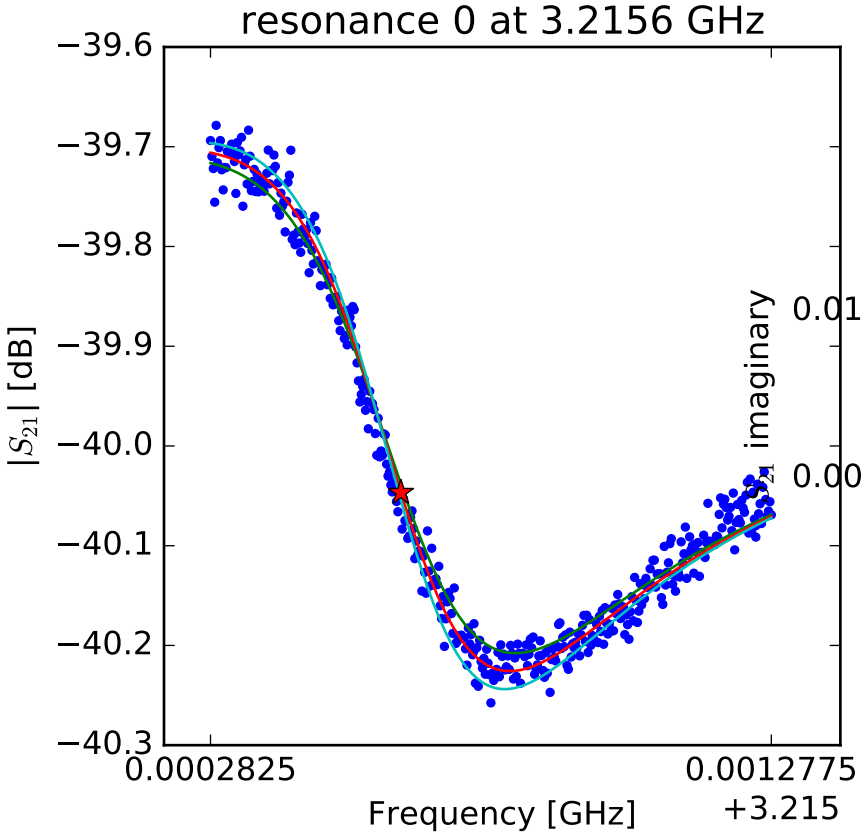
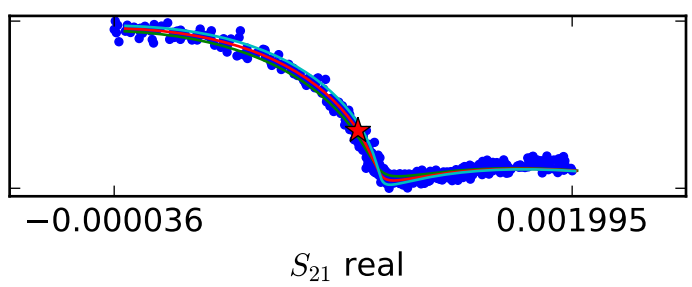
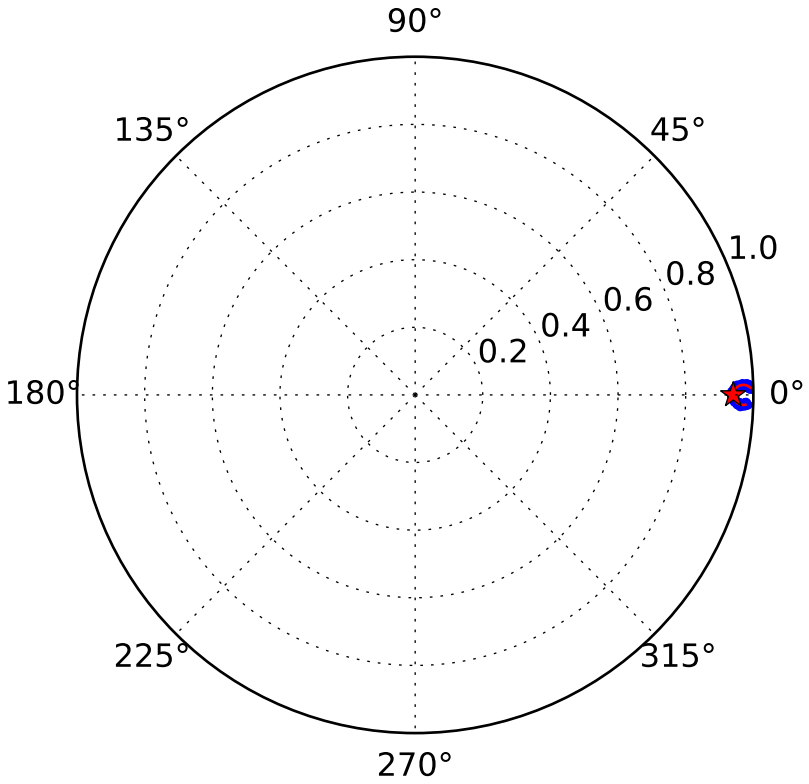
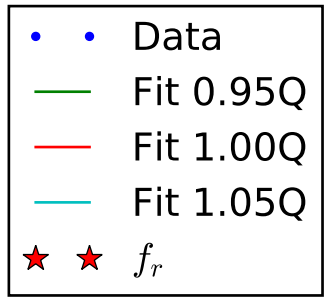

Transmission with Resonance Identification
−38
−39
−40
−41
−42
−43
−44
−45
−46
$|S_{21}|$ [dB]
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
39 resonances identified
3.1
3.2
3.3
3.4
3.5
3.6
3.7
Frequency [GHz]



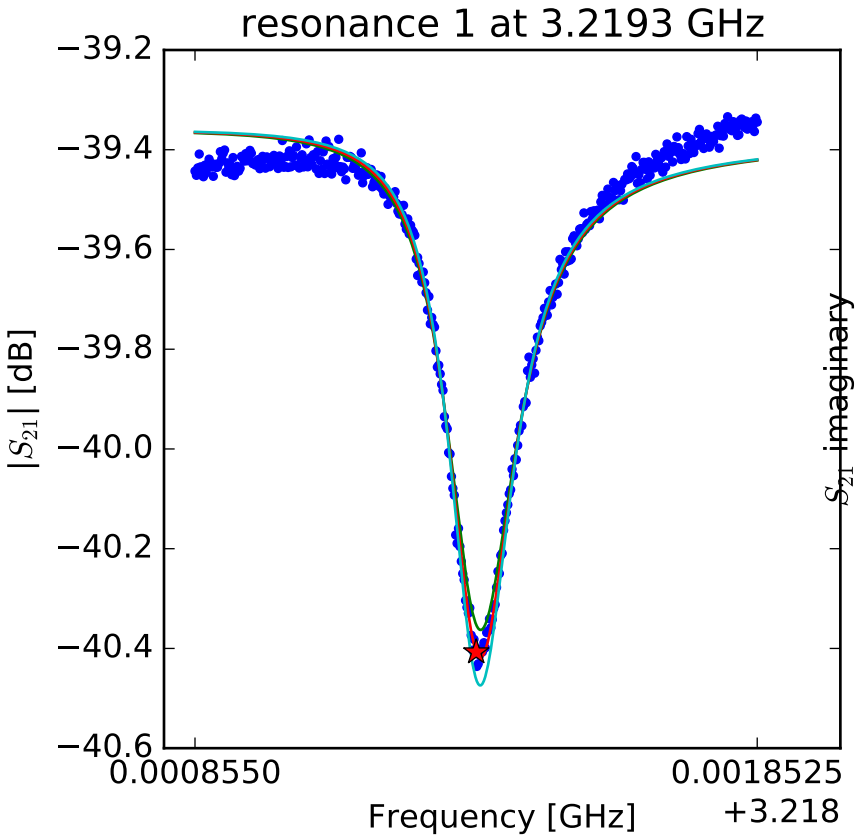


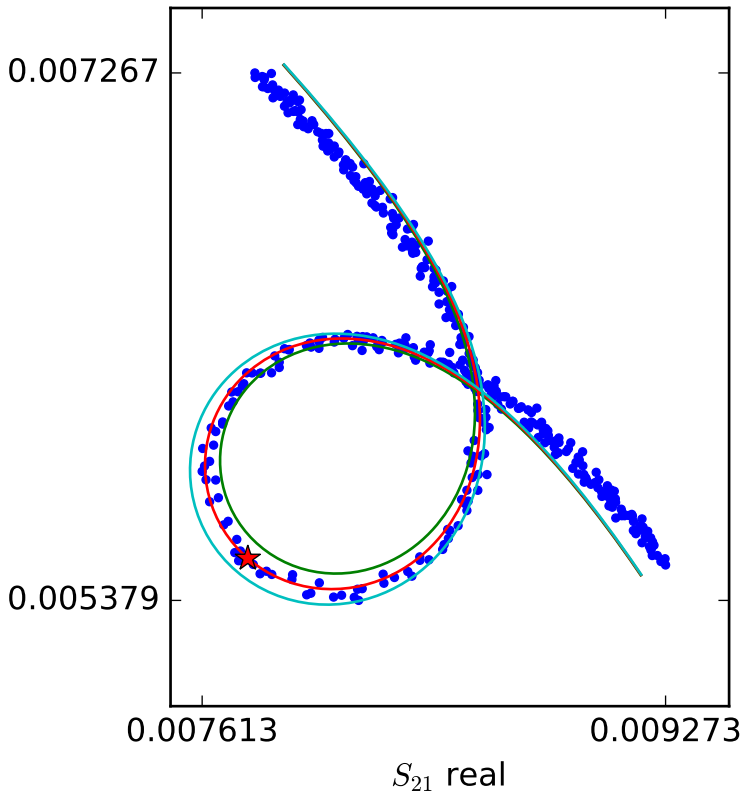


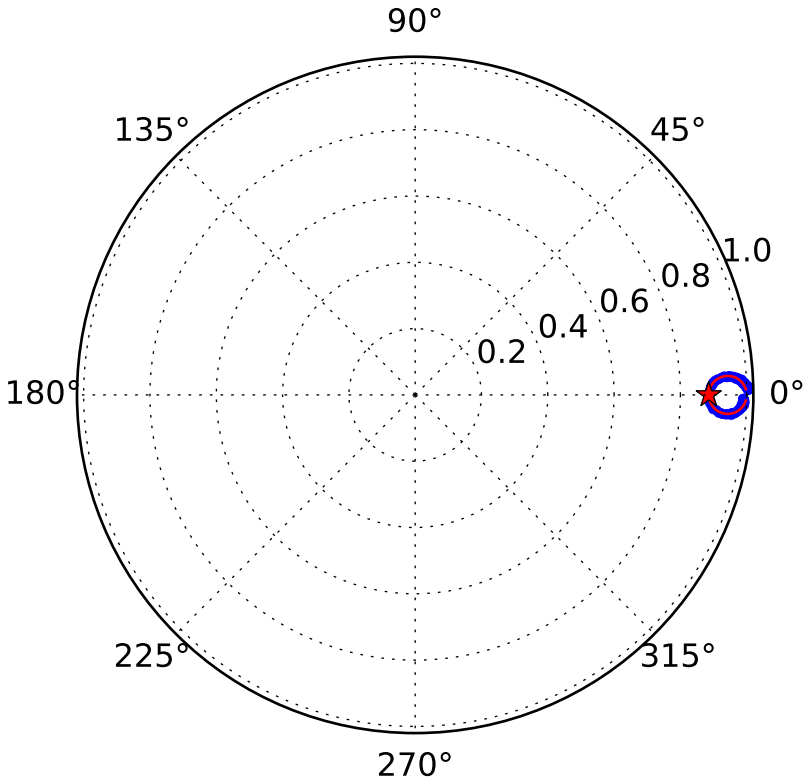


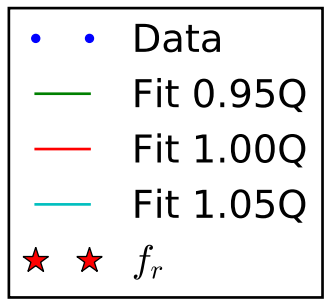
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.21562033553
Q_r = 5834.64398102
Q_c = 98090.1203499
a = (0.010149089401+0.000257985421629j)
ϕ_0 = 1.1945799043
τ = 37.5547458706



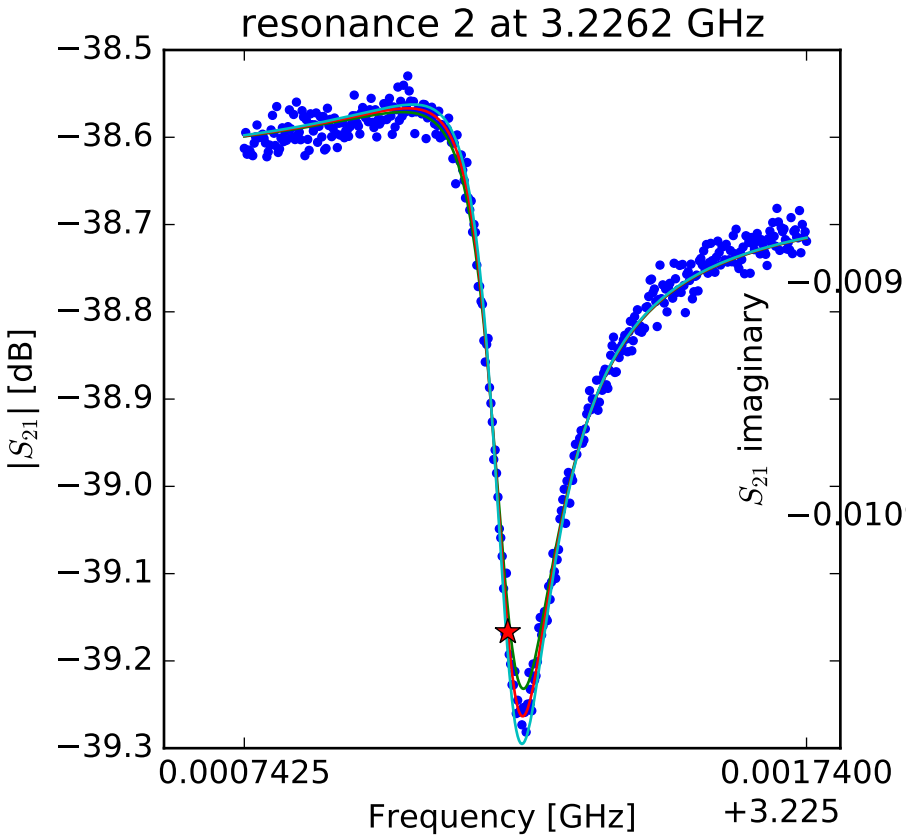


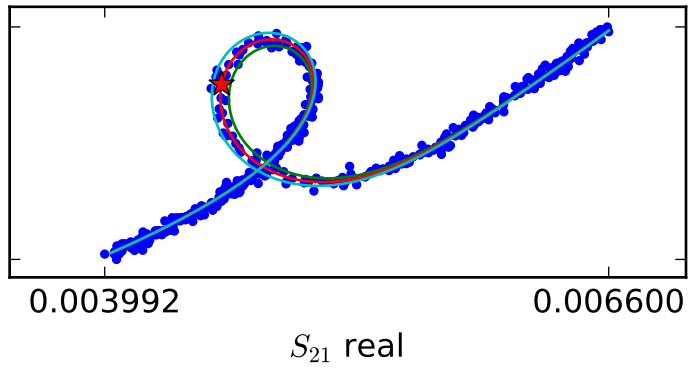


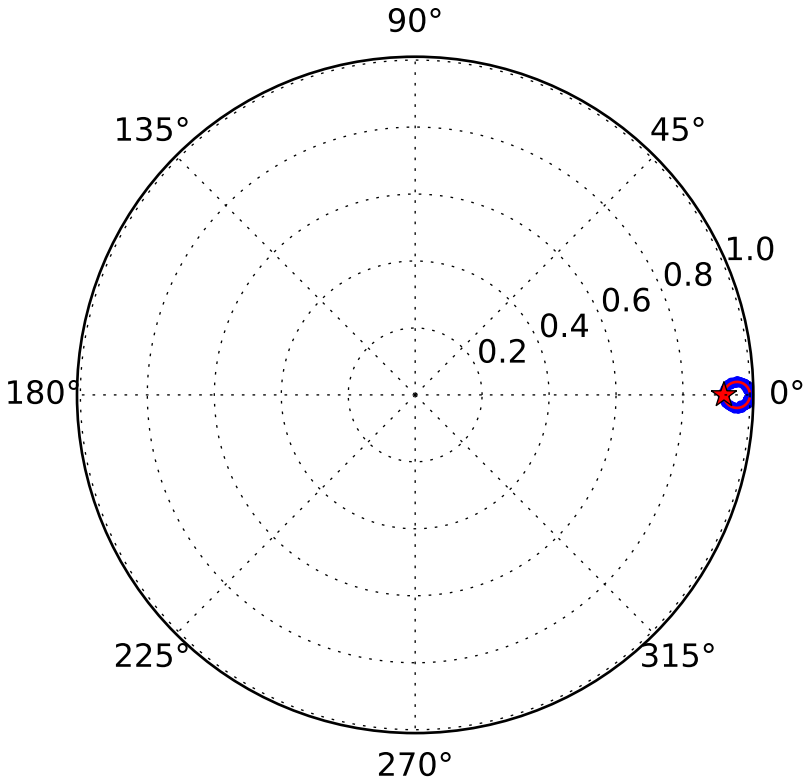


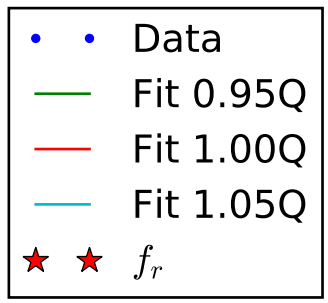
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.21935391545
Q_r = 20898.8780339
Q_c = 182335.911826
a = (-0.0105497410101-0.00206967084989j)
ϕ_0 = 0.183485830334
τ = 38.6502119716



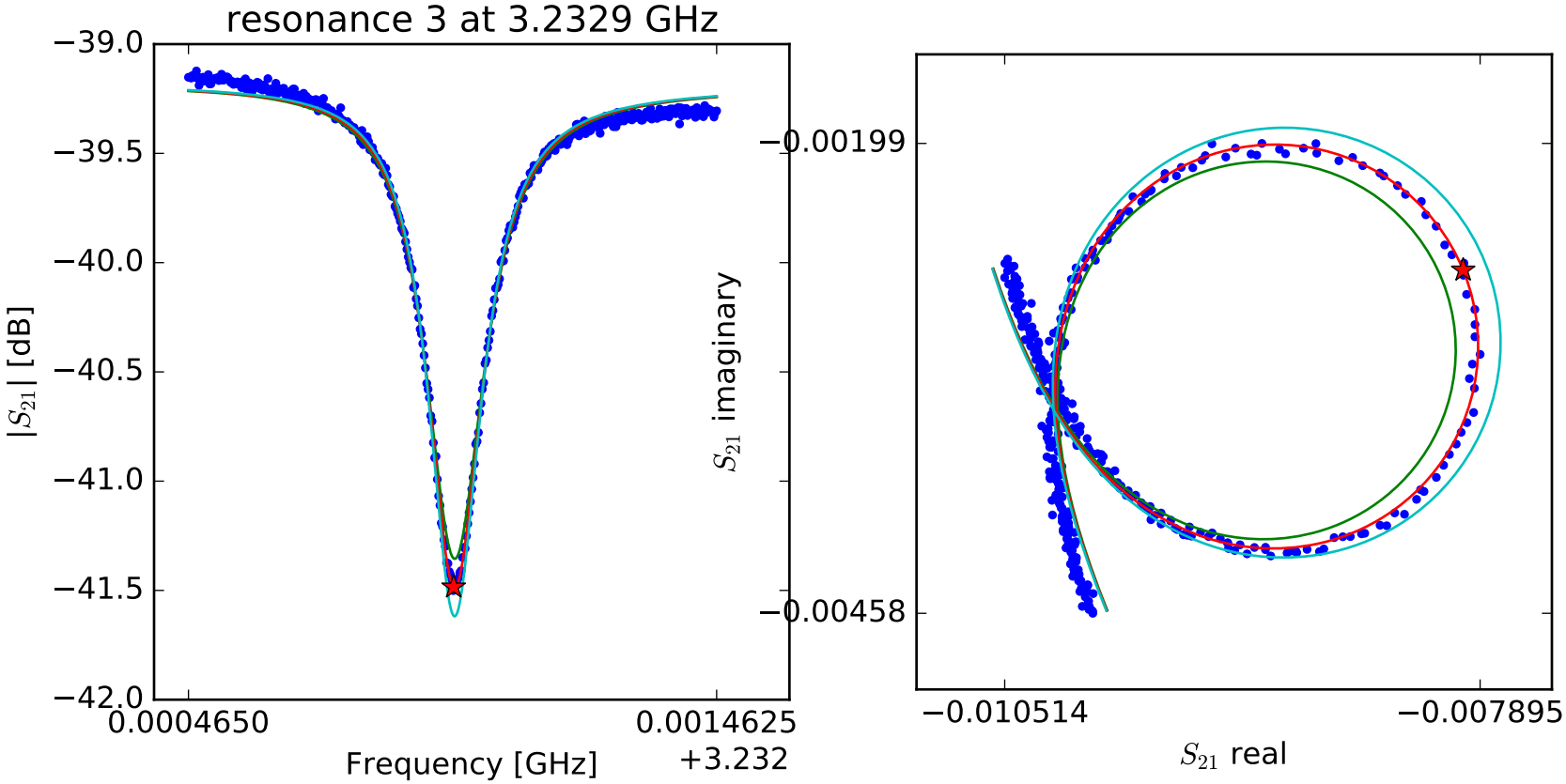


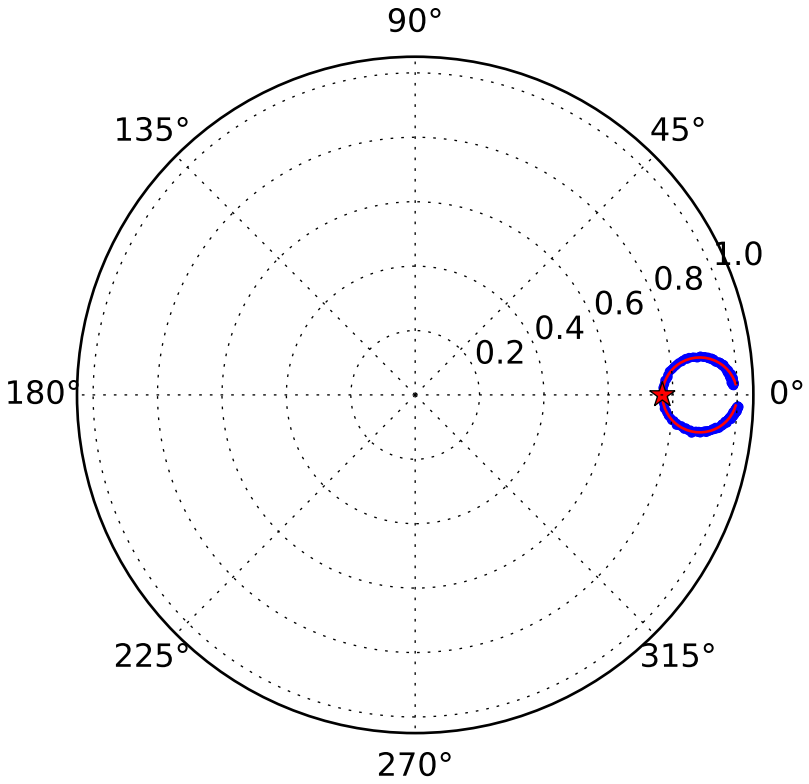


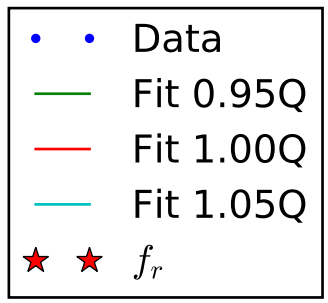


$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.22620996348
Q_r = 23577.8716817
Q_c = 302908.735997
a = (0.00919617400845-0.00720121447996j)
ϕ_0 = 0.710126572115
τ = 41.2456475305

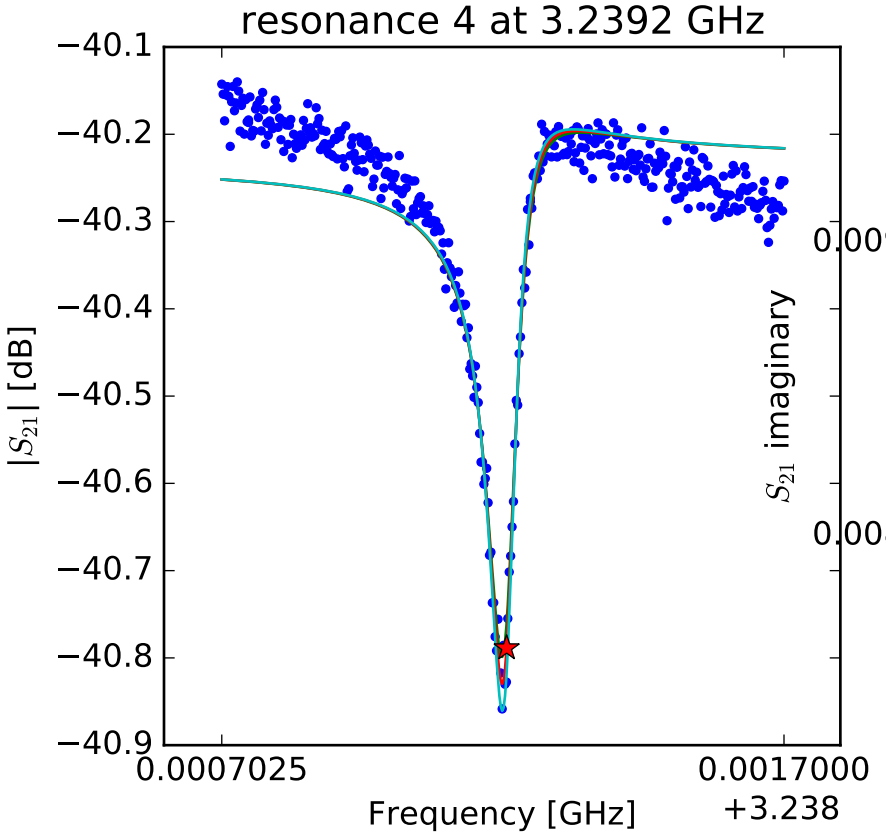


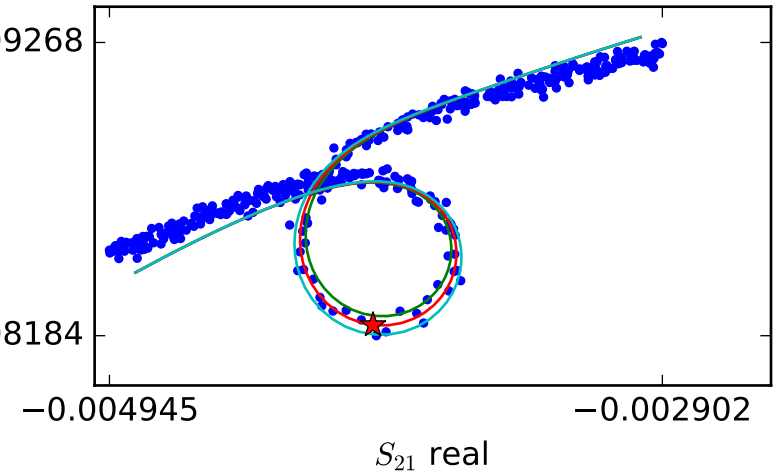


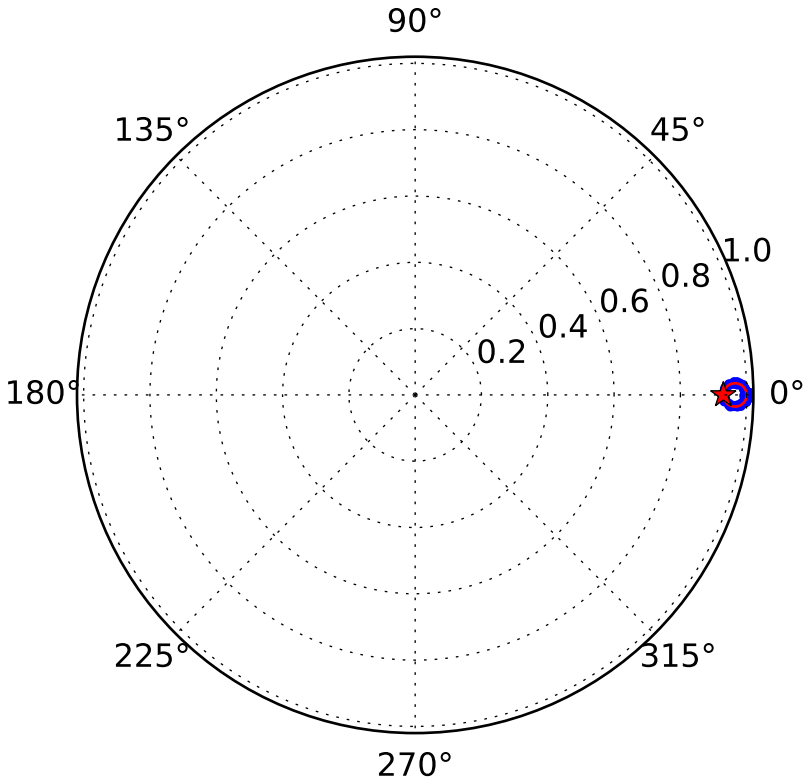


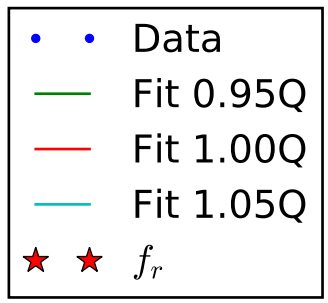
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.23296581278
Q_r = 22139.5120248
Q_c = 95189.7652588
a = (0.00507751234349-0.00973433312262j)
ϕ_0 = 0.0464294315601
τ = 39.6764520889



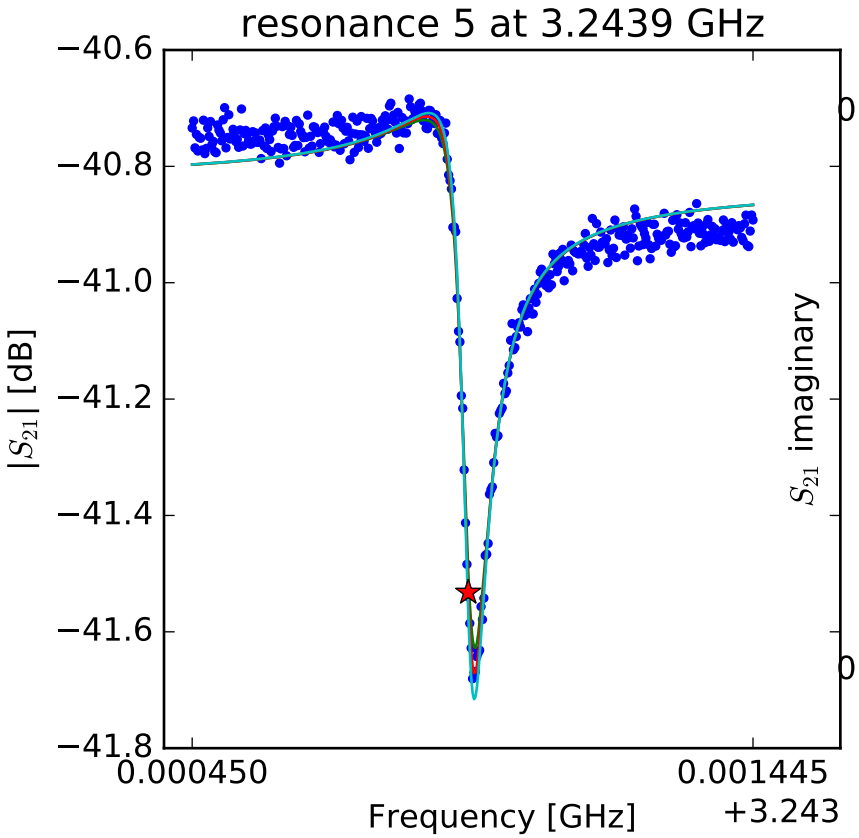


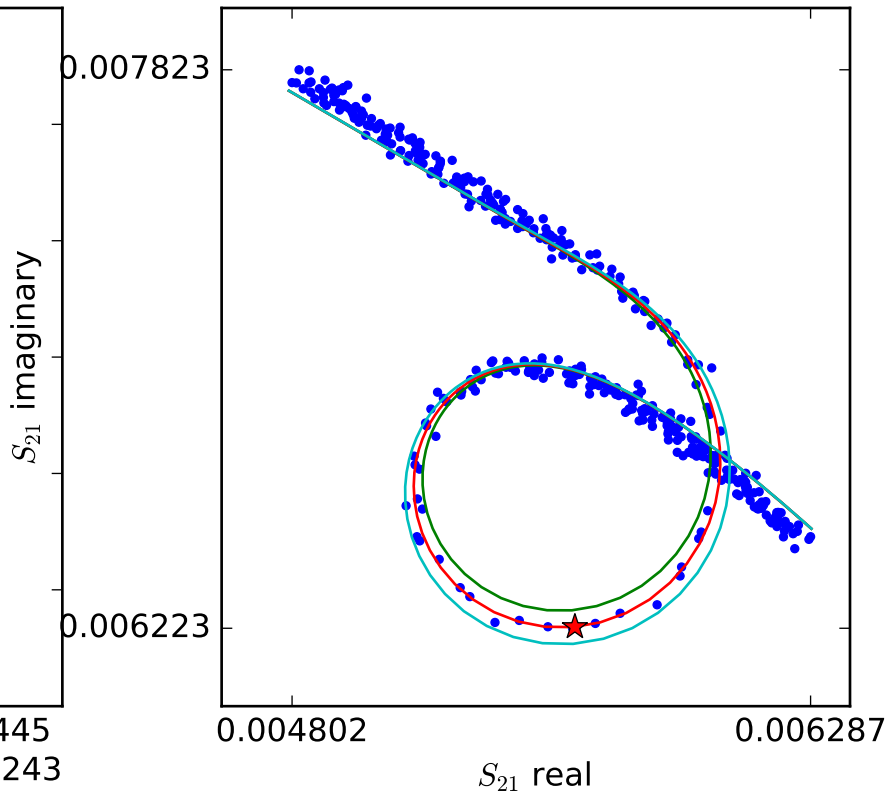


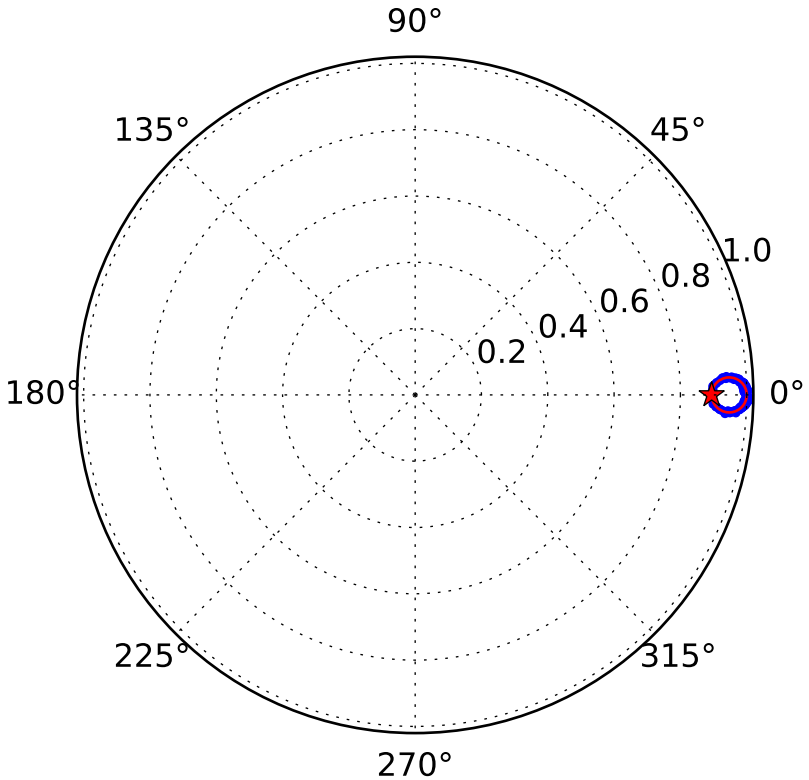


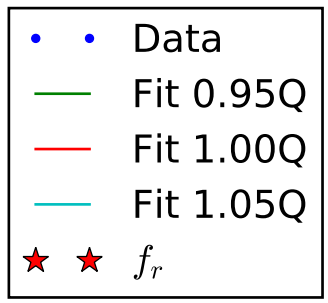
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.23920789975
Q_r = 51389.0045701
Q_c = 727440.200659
a = (0.00850484319665-0.00473964970555j)
ϕ_0 = -0.480627234431
τ = 35.0712370348



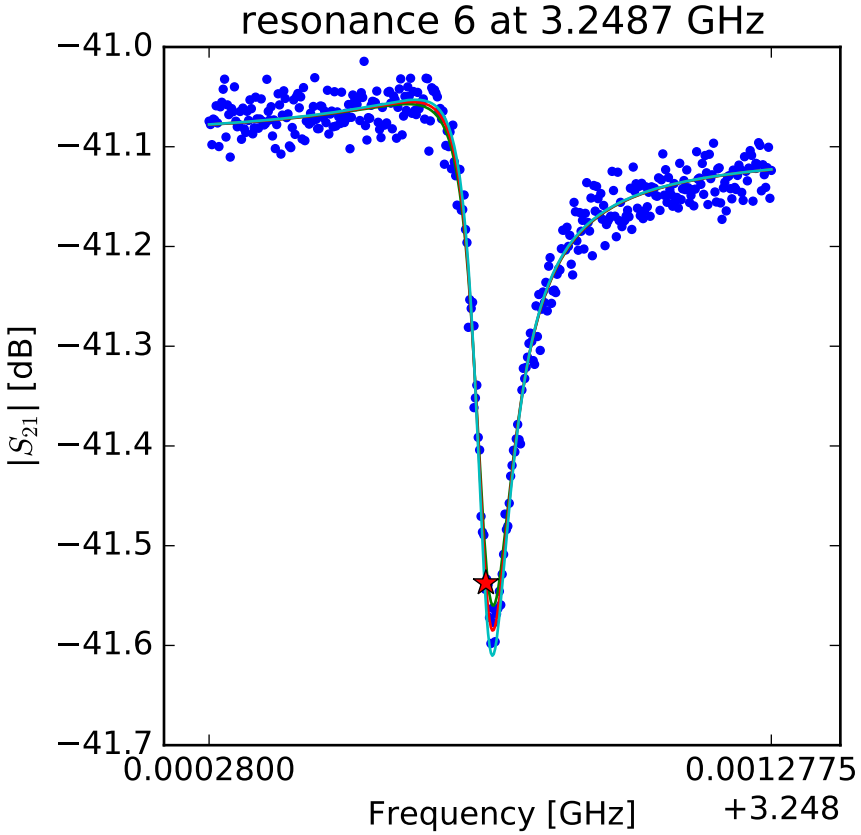


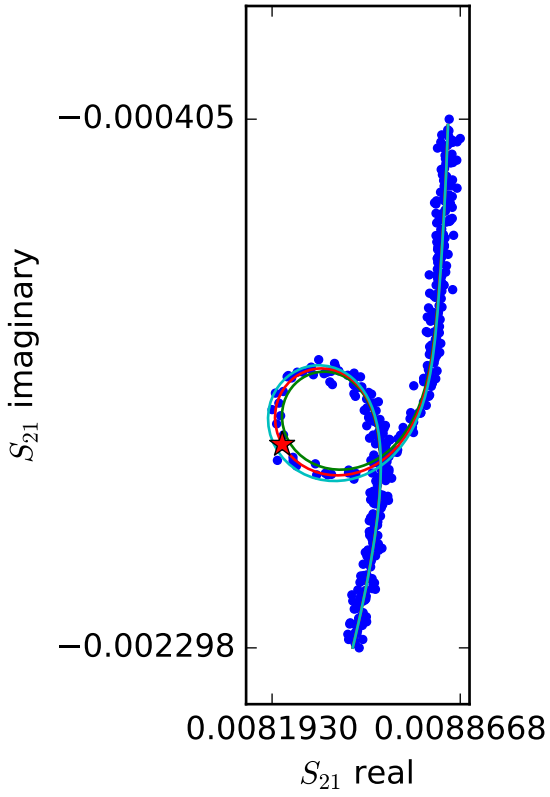


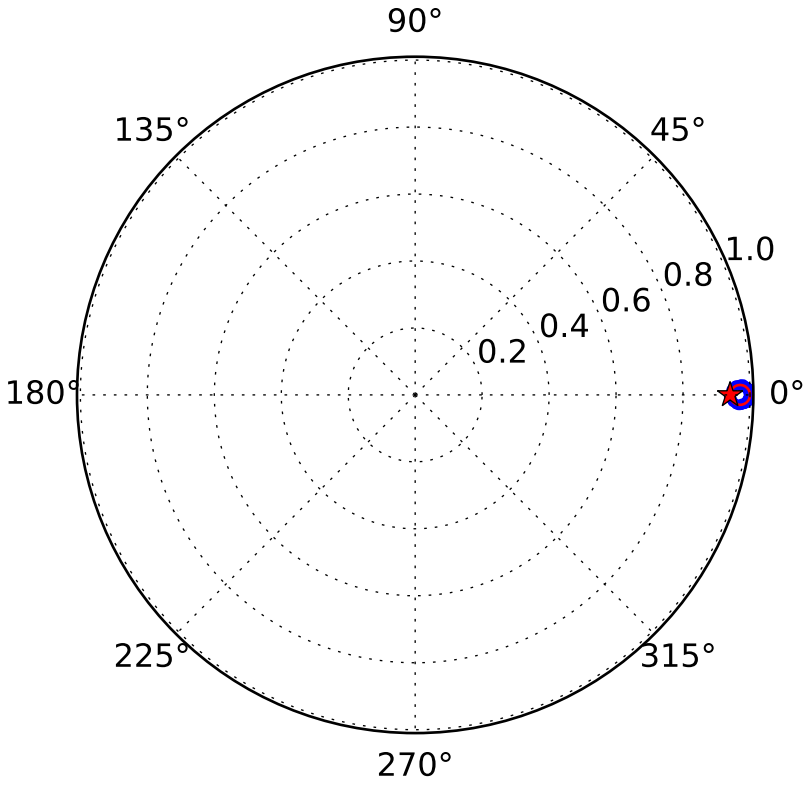


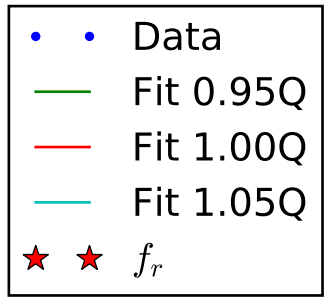
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.24393978715
Q_r = 56092.3918579
Q_c = 530118.464658
a = (-0.00663756258855-0.00620886967106j)
ϕ_0 = 0.709629447137
τ = 35.9052658147



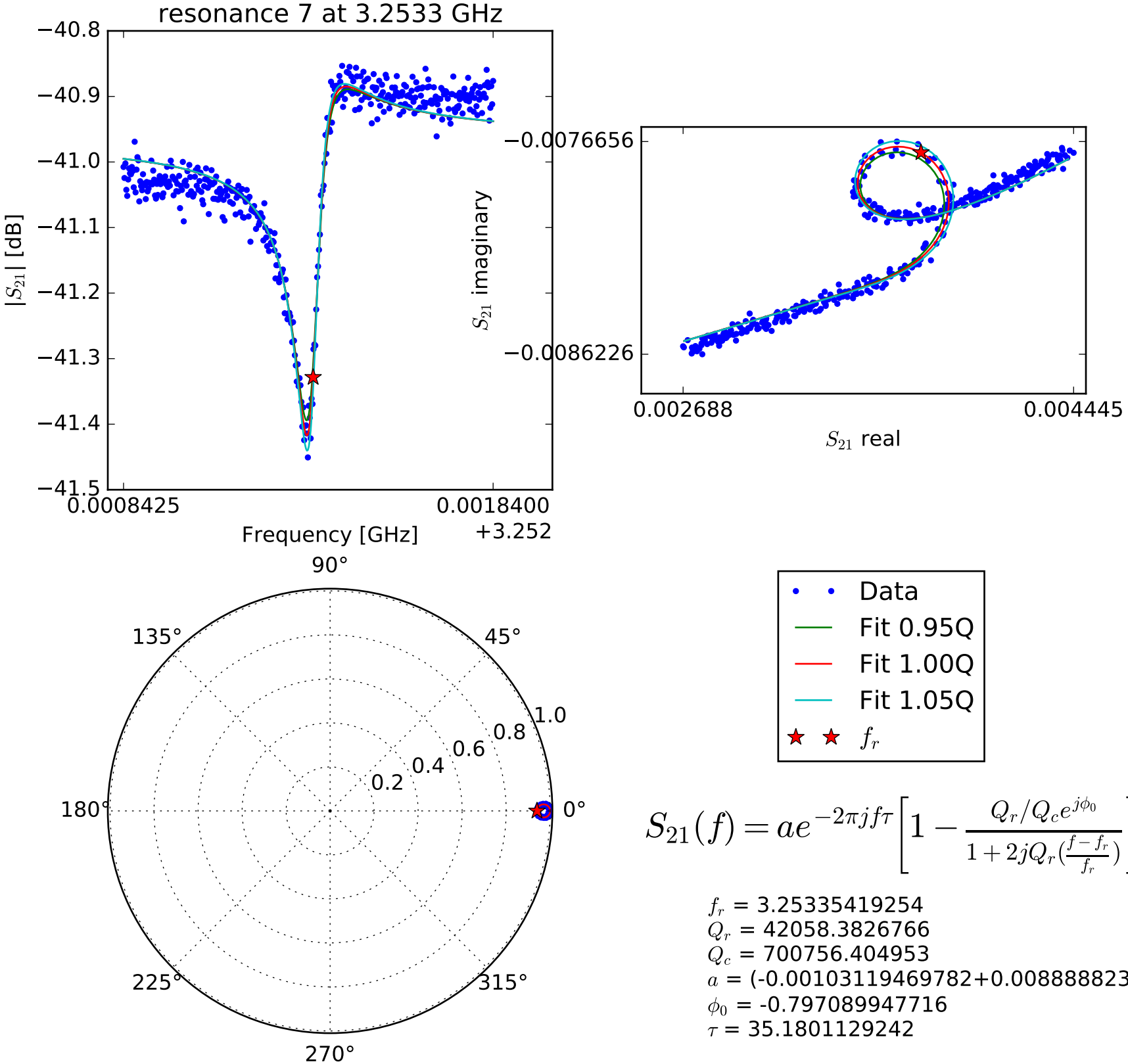






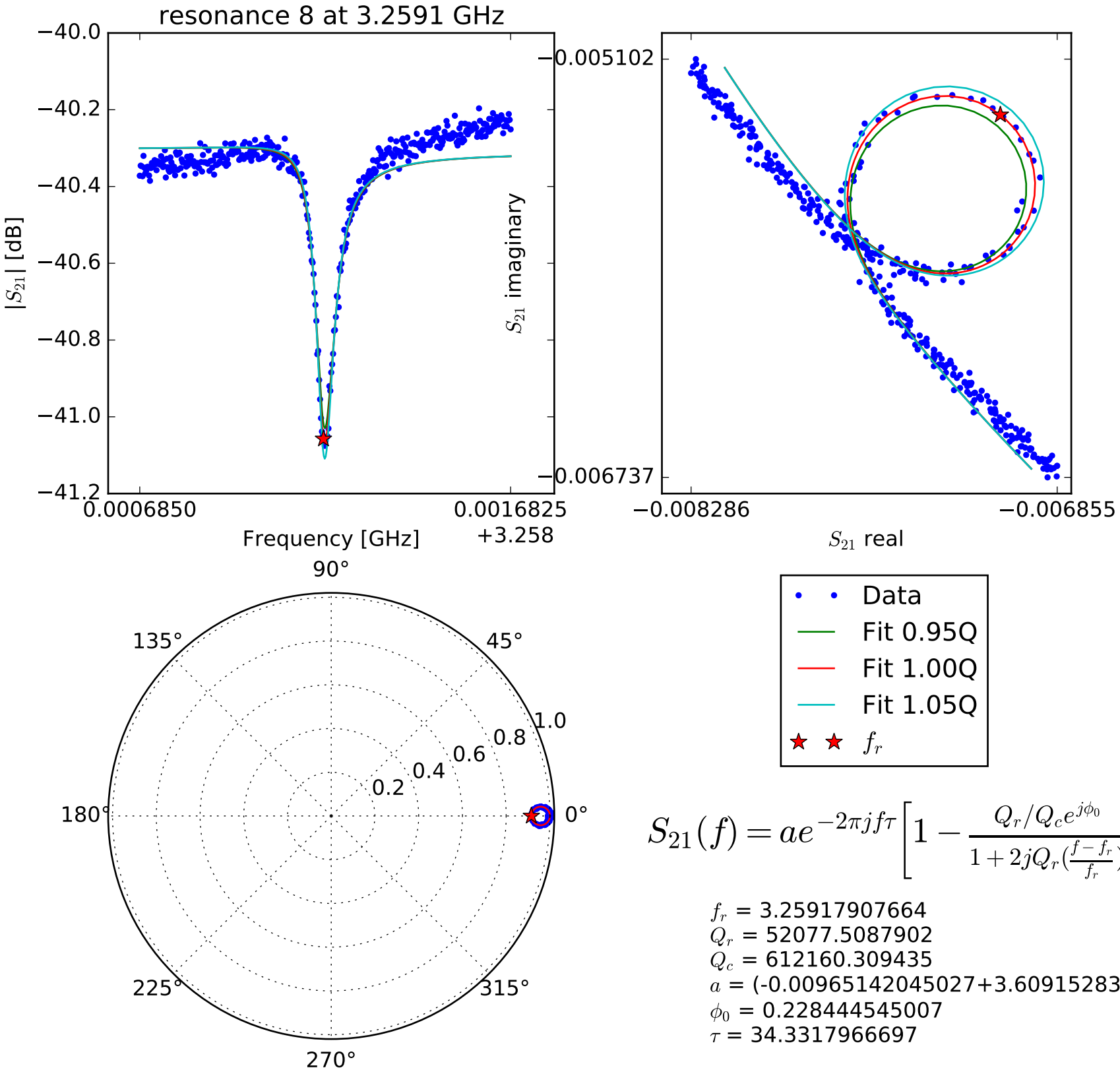
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.24877108835
Q_r = 40388.357555
Q_c = 678657.963084
a = (0.00390172526832+0.0079018417334j)
ϕ_0 = 0.576375854152
τ = 35.7678566136



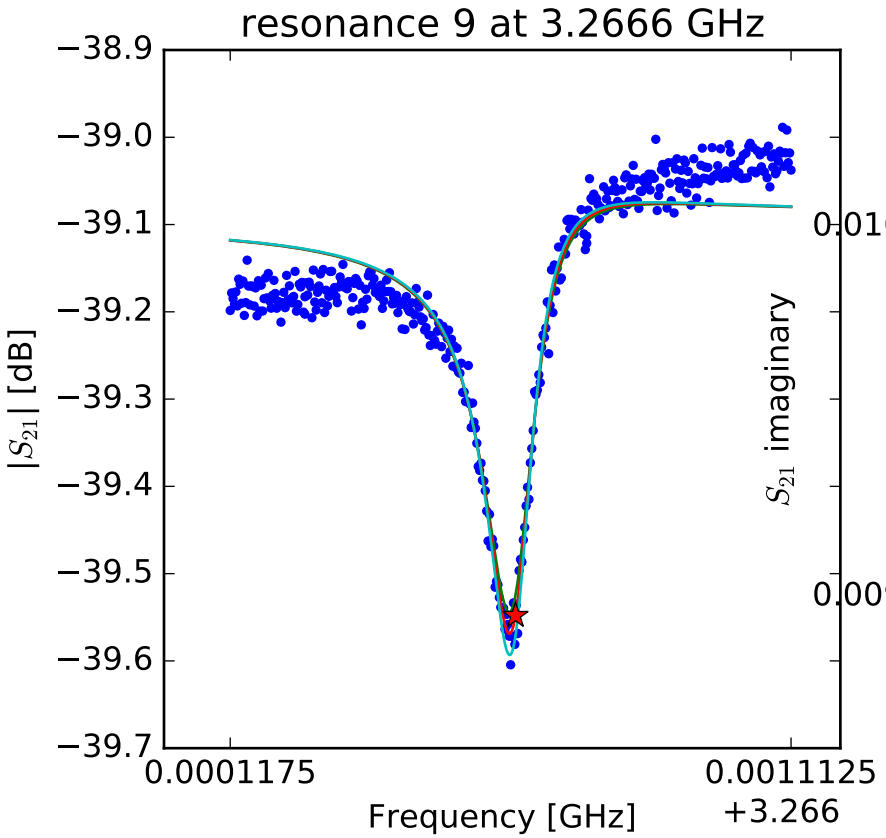
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

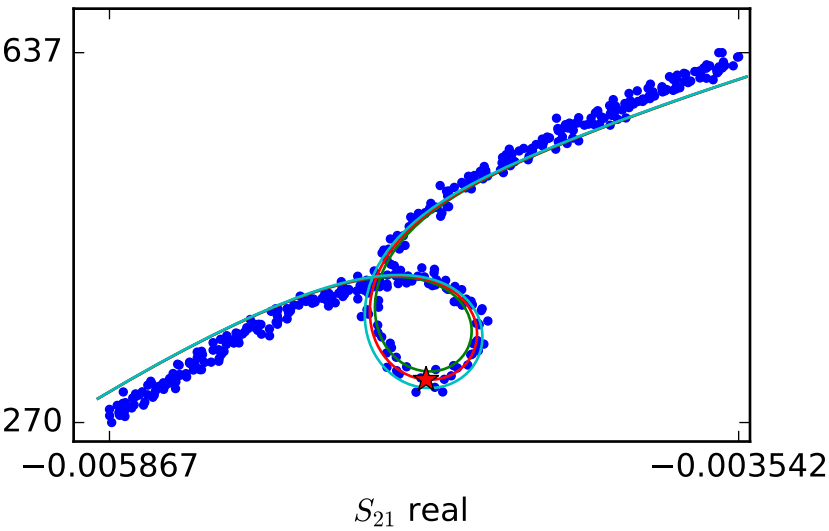
f_r = 3.25335419254
Q_r = 42058.3826766
Q_c = 700756.404953
a = (-0.00103119469782+0.00888882336747j)
ϕ_0 = -0.797089947716
τ = 35.1801129242

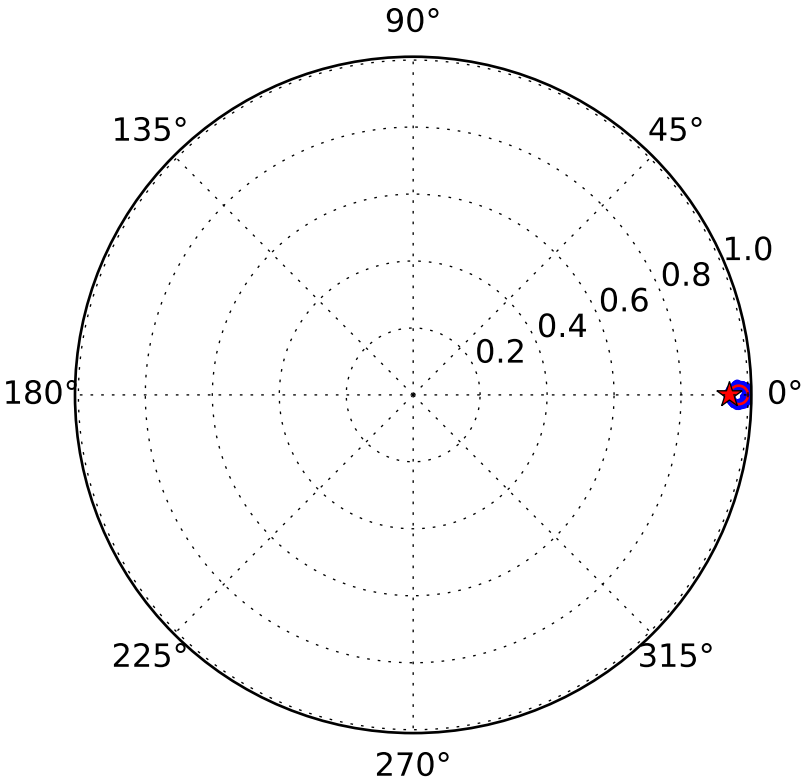


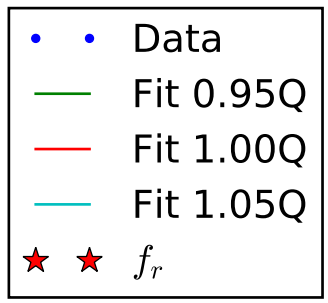
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.25917907664
Q_r = 52077.5087902
Q_c = 612160.309435
a = (-0.00965142045027+3.60915283979e-05j
ϕ_0 = 0.228444545007
τ = 34.3317966697



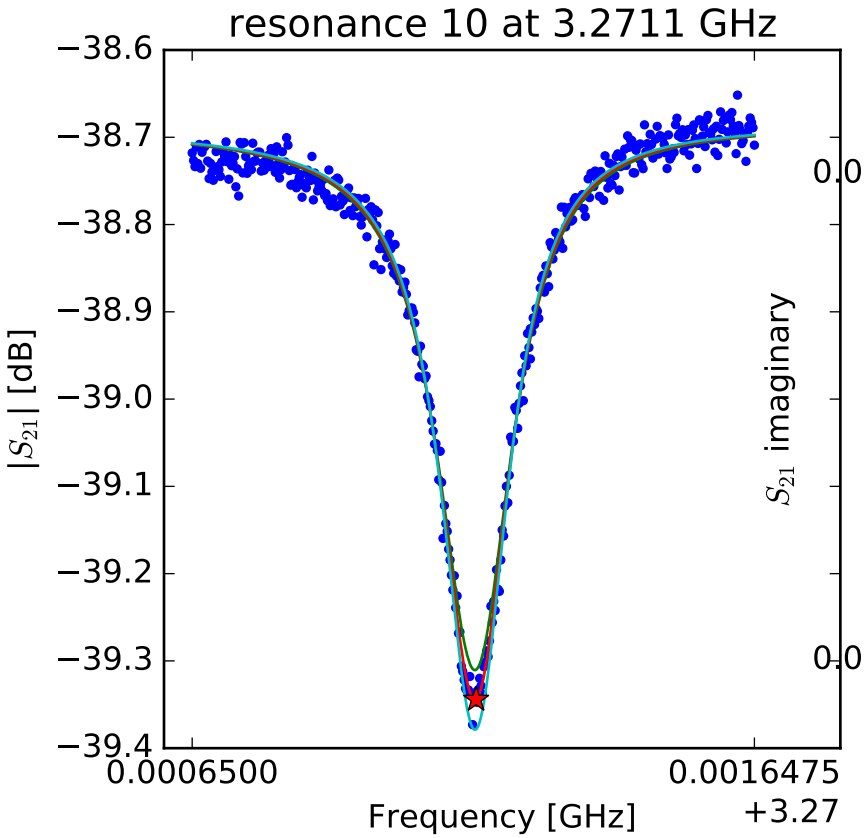


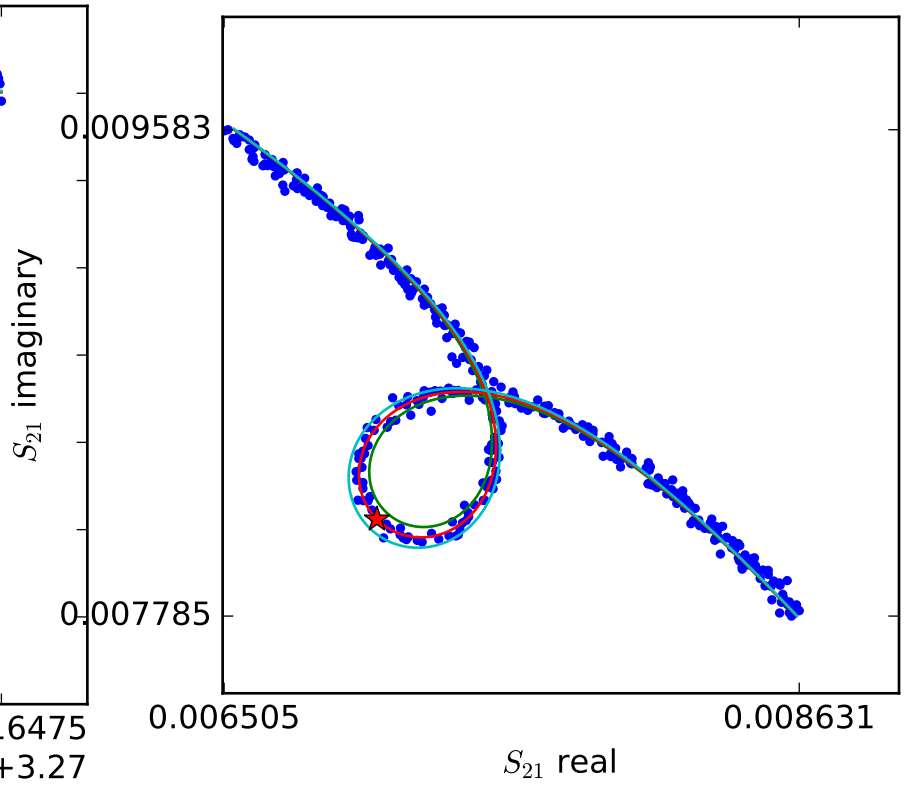


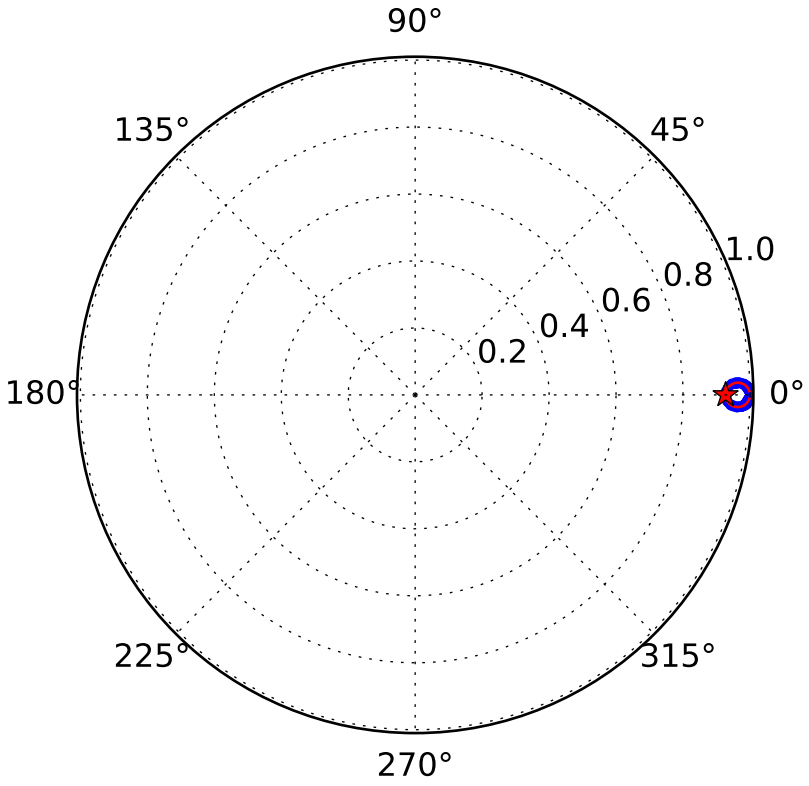


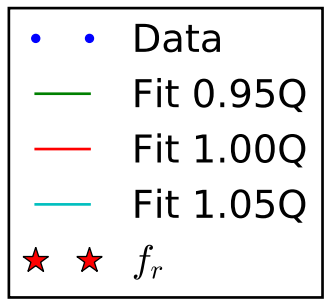
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.26662366249
Q_r = 30899.8275734
Q_c = 558193.415702
a = (-0.000413212439969+0.011091434587j)
ϕ_0 = -0.392516558892
τ = 40.3890777526



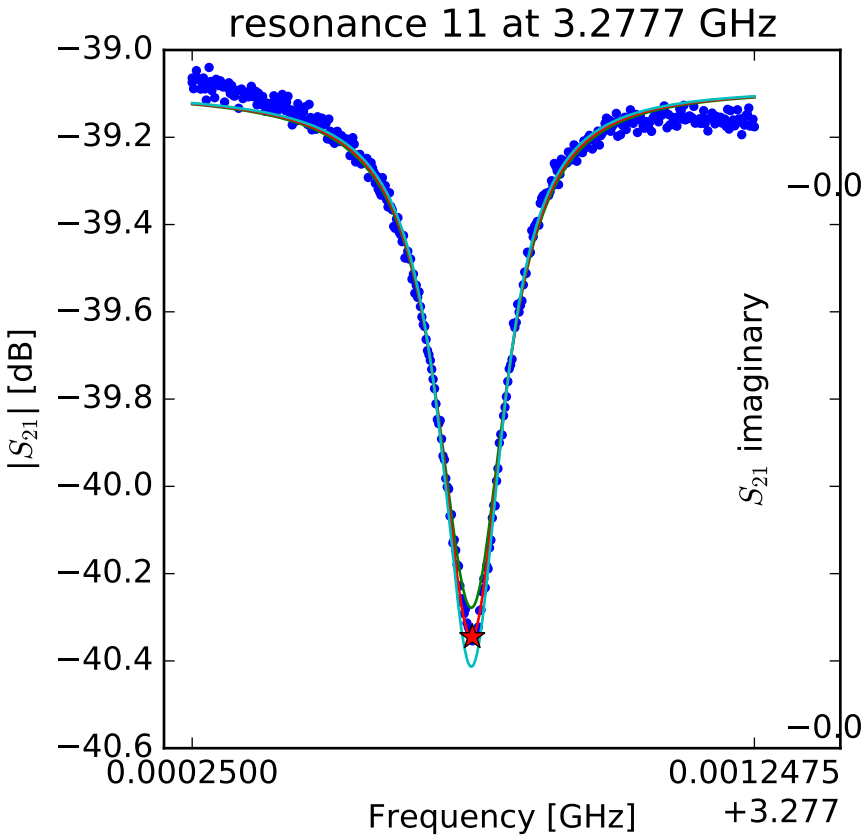


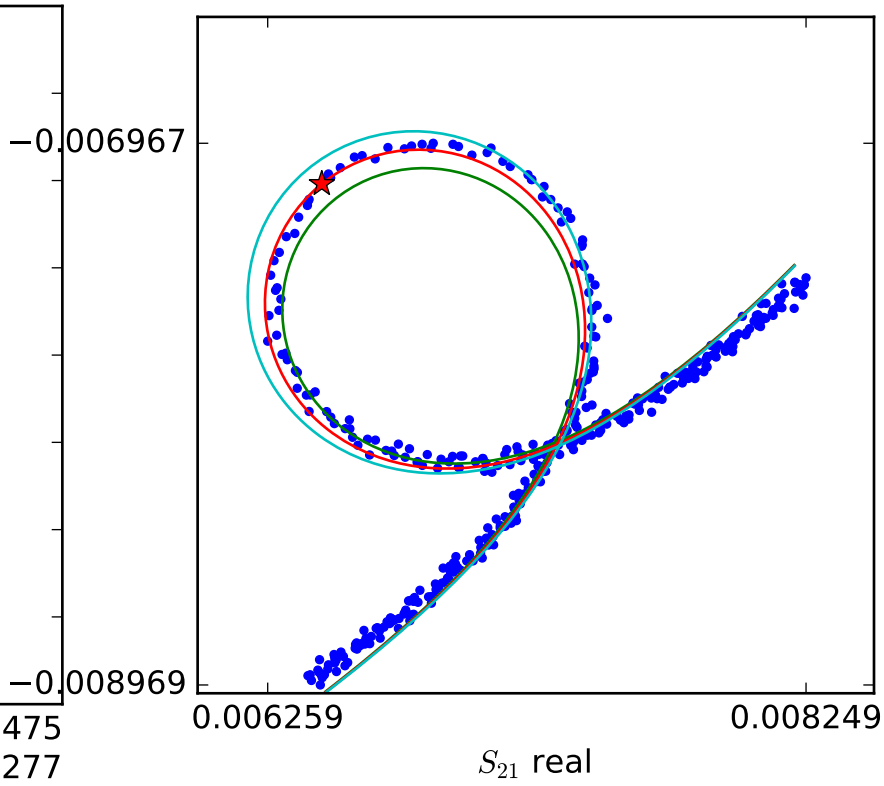


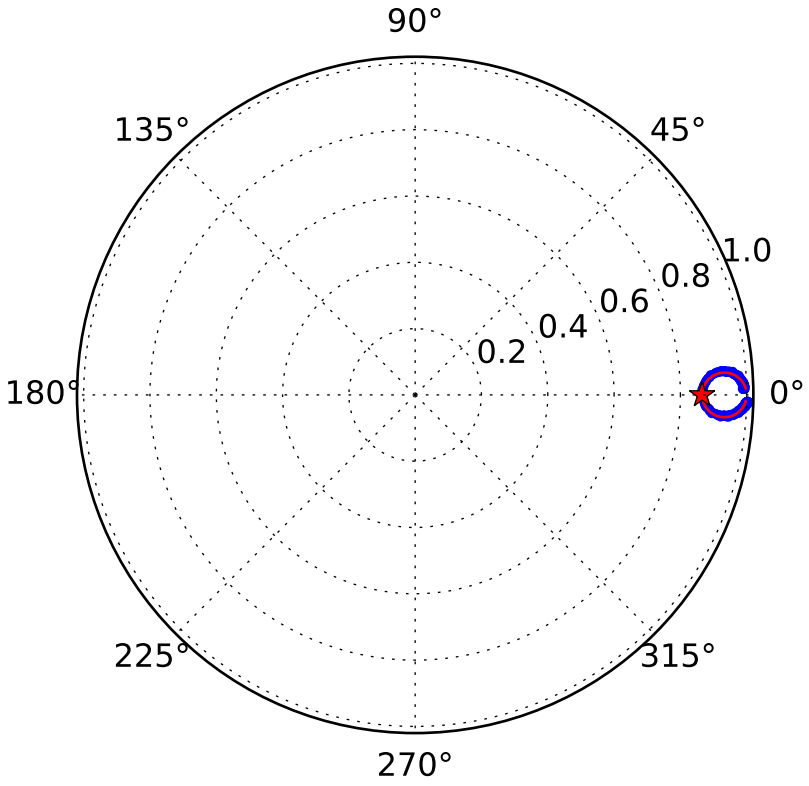


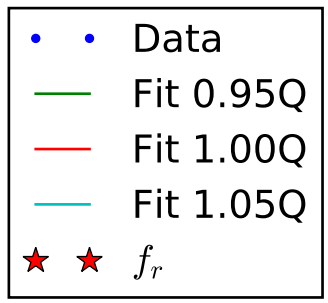
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.27115380288
Q_r = 20491.8495541
Q_c = 281066.910204
a = (0.0115966311924-0.000893826376301j)
ϕ_0 = -0.0514849971206
τ = 41.5303608353



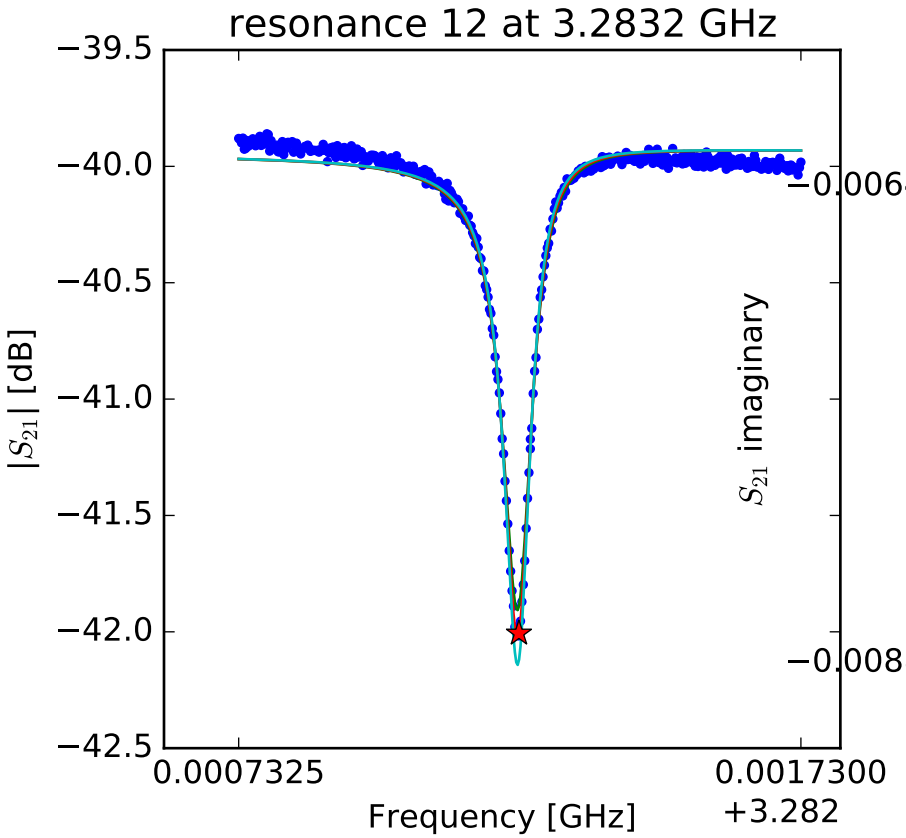


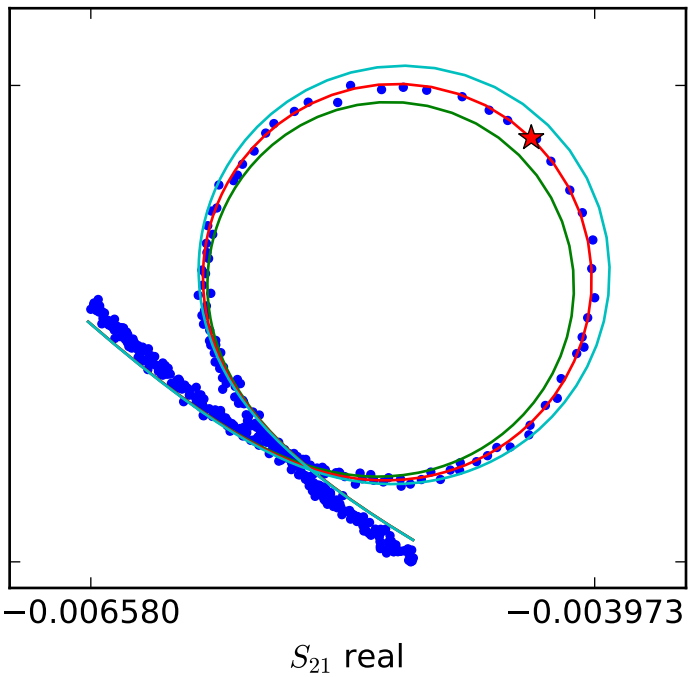


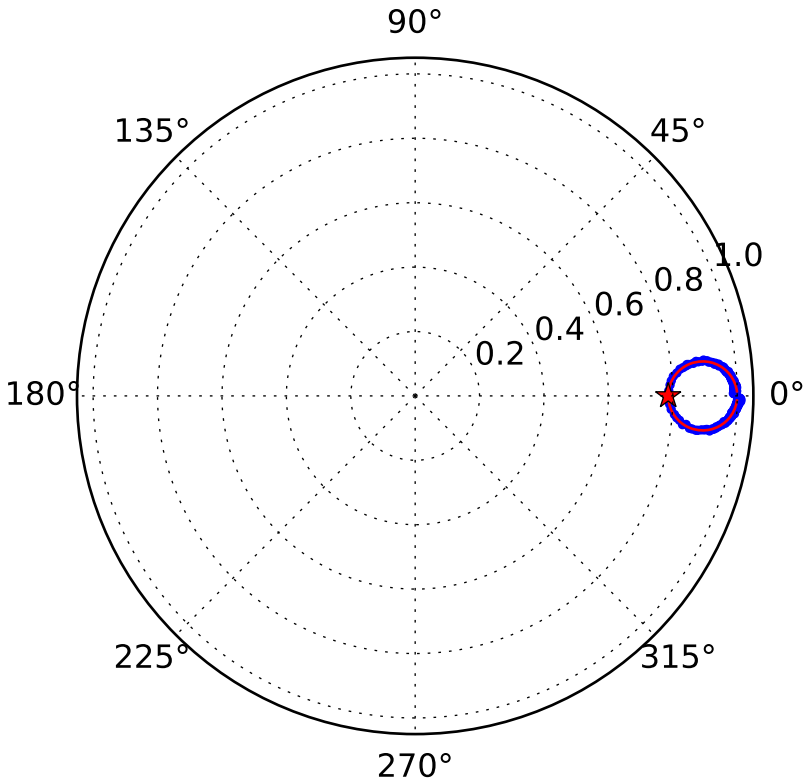


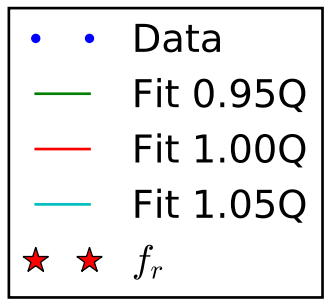
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.27774697364
Q_r = 21688.2250237
Q_c = 161105.516461
a = (-0.00941828886726-0.00588153907813j)
ϕ_0 = -0.0437638571348
τ = 40.1869440978



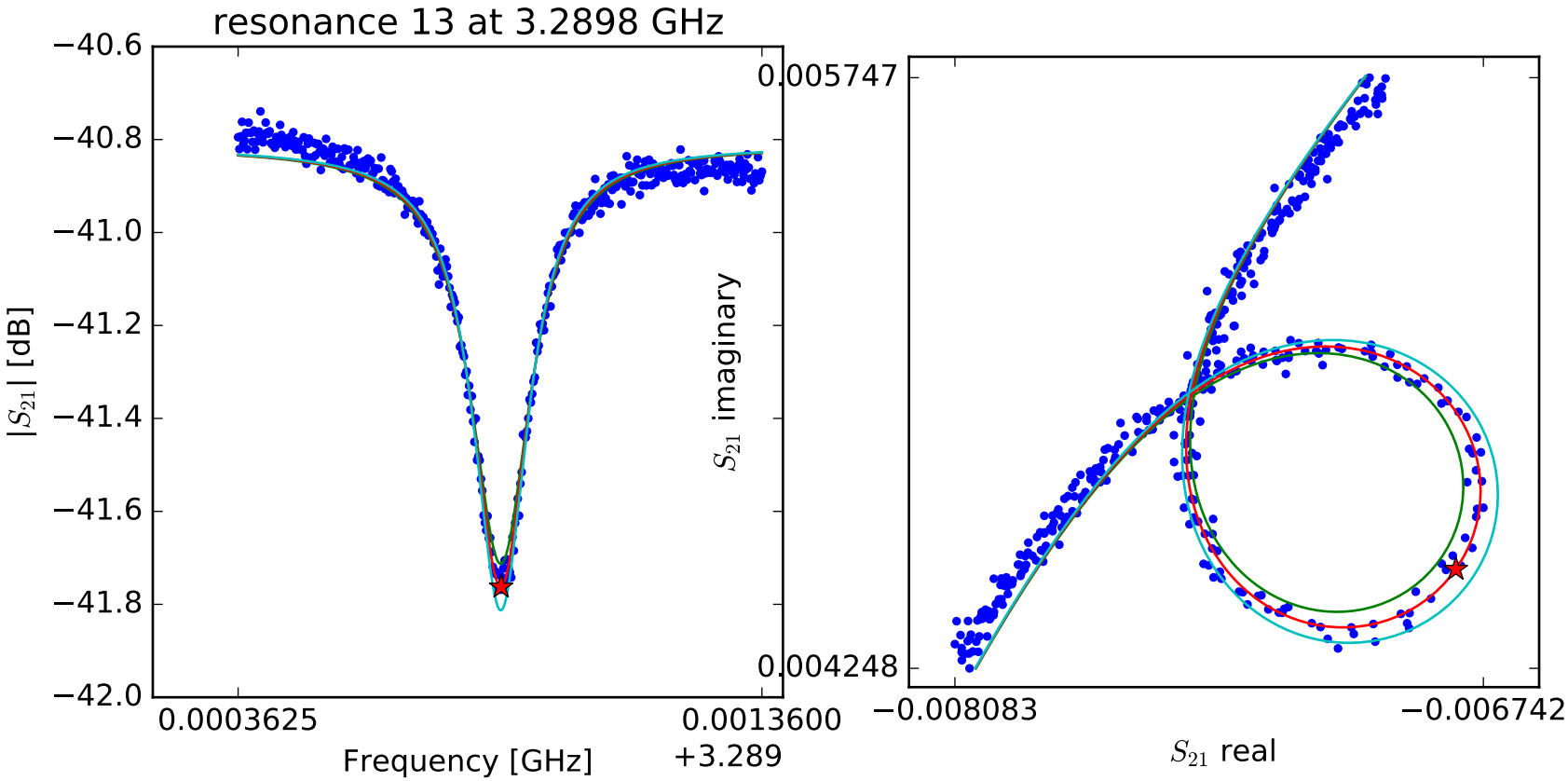


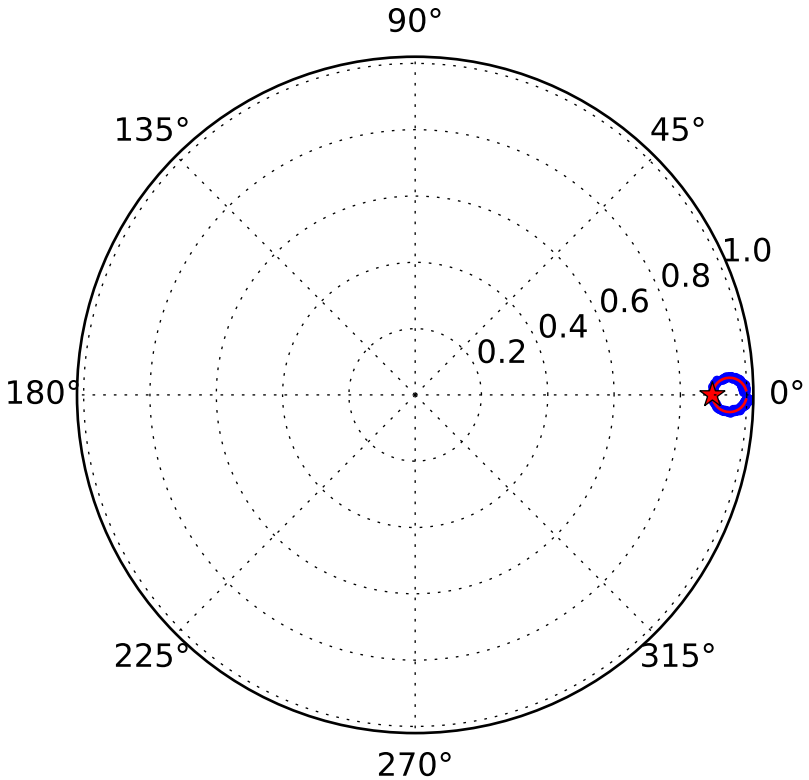


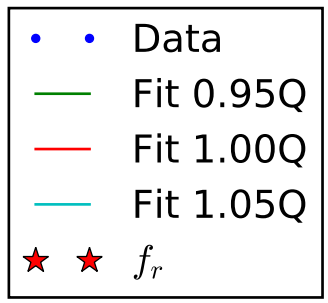


$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.28322973406
Q_r = 48595.0874555
Q_c = 226688.062544
a = (-0.00277012095919+0.00967755597732j)
ϕ_0 = -0.145523395001
τ = 36.7448494419

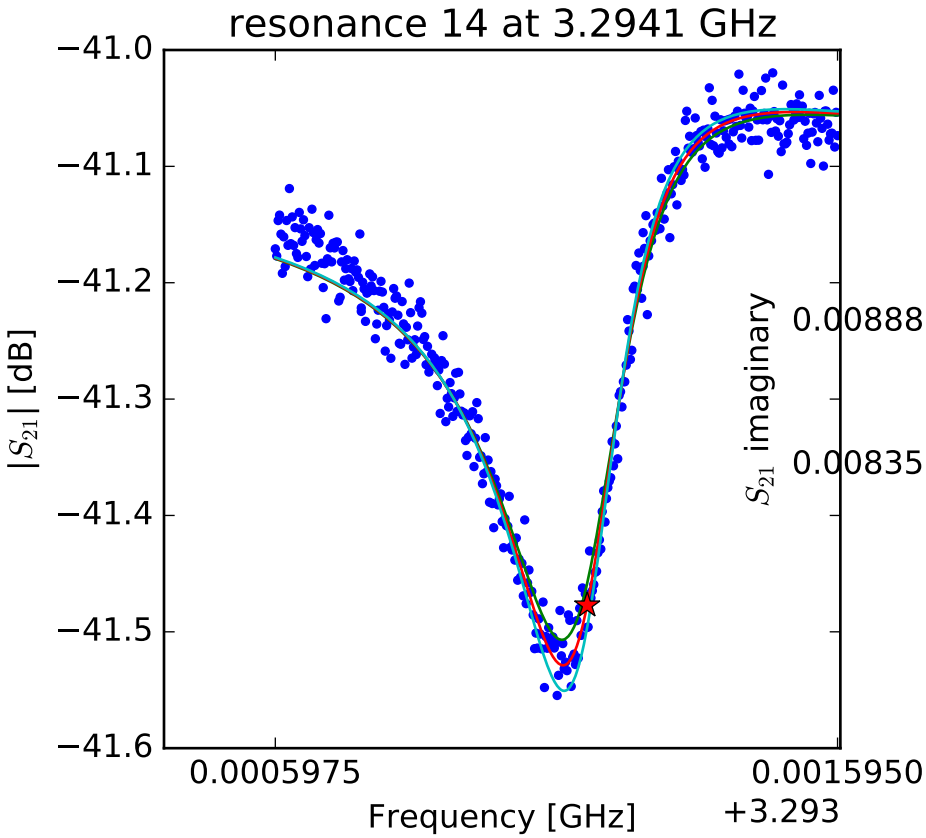


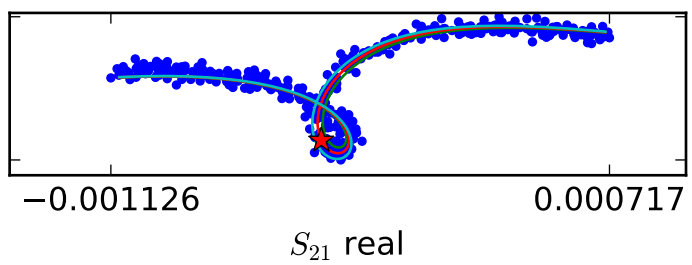


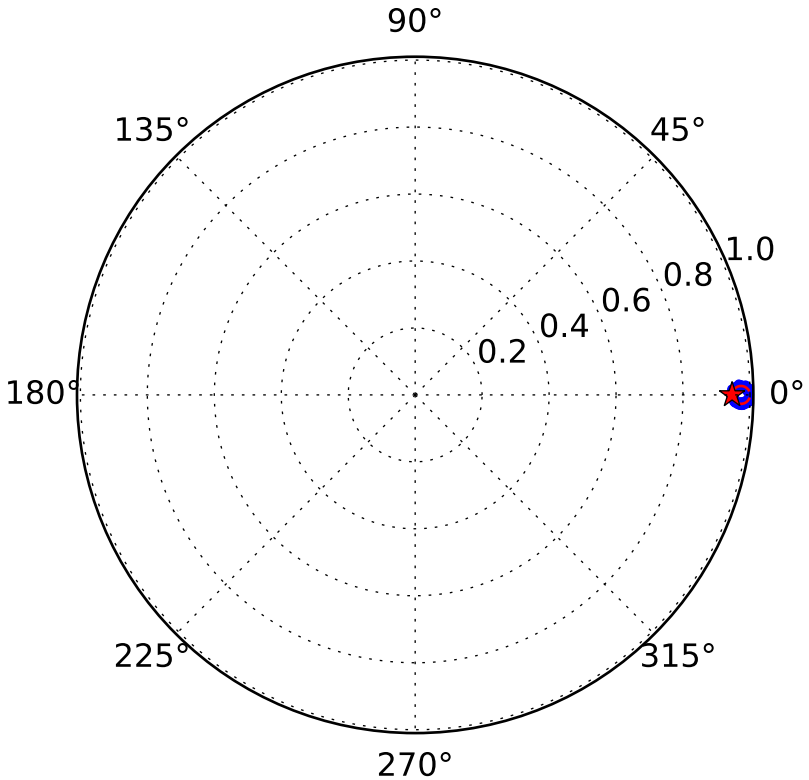


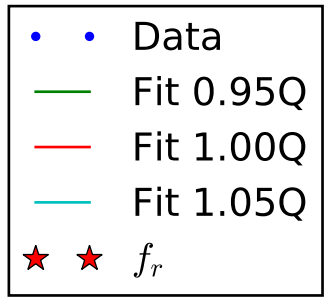
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.28986338488
Q_r = 23520.5268462
Q_c = 227301.759478
a = (-0.00904690141384-0.00102821629215j)
ϕ_0 = -0.0225312712724
τ = 36.2055559191



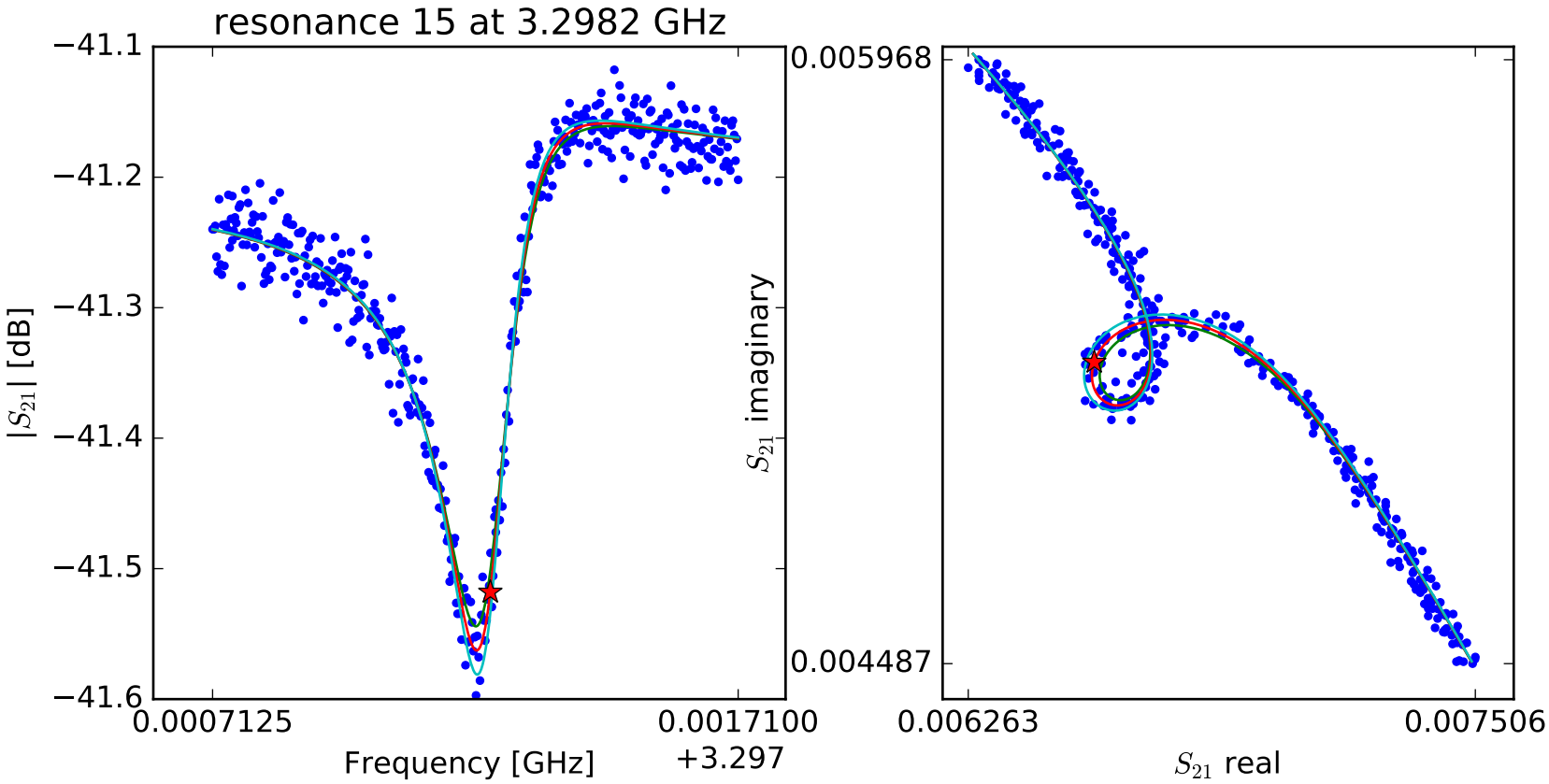


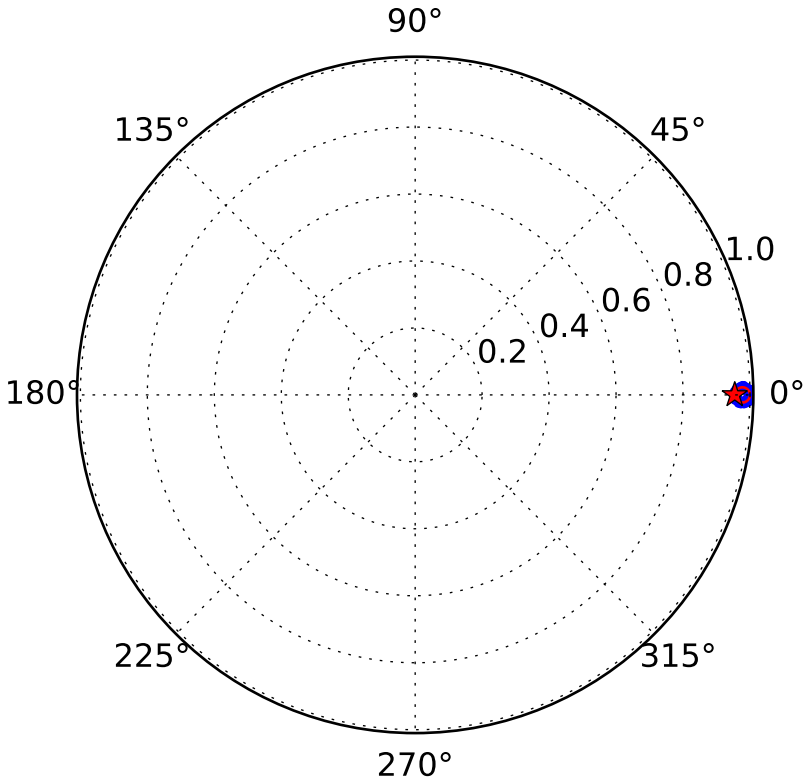


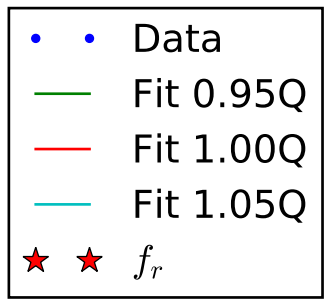


$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.29415090139
Q_r = 13043.2693087
Q_c = 243498.823233
a = (-0.00333398374834+0.00815521977098j)
ϕ_0 = -0.638605422478
τ = 36.1430032551

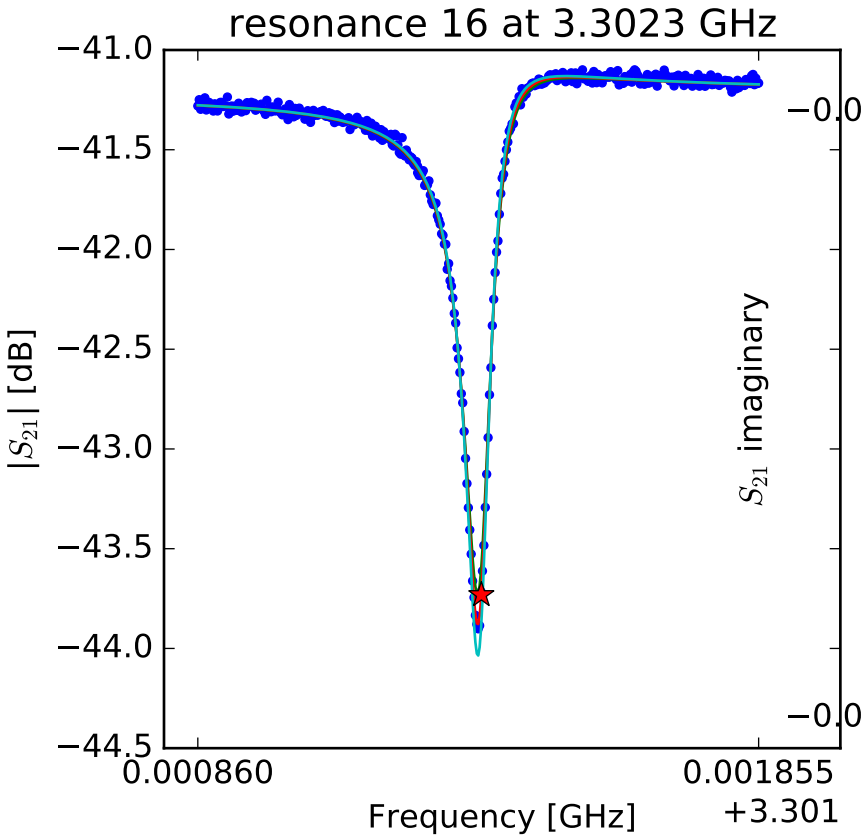


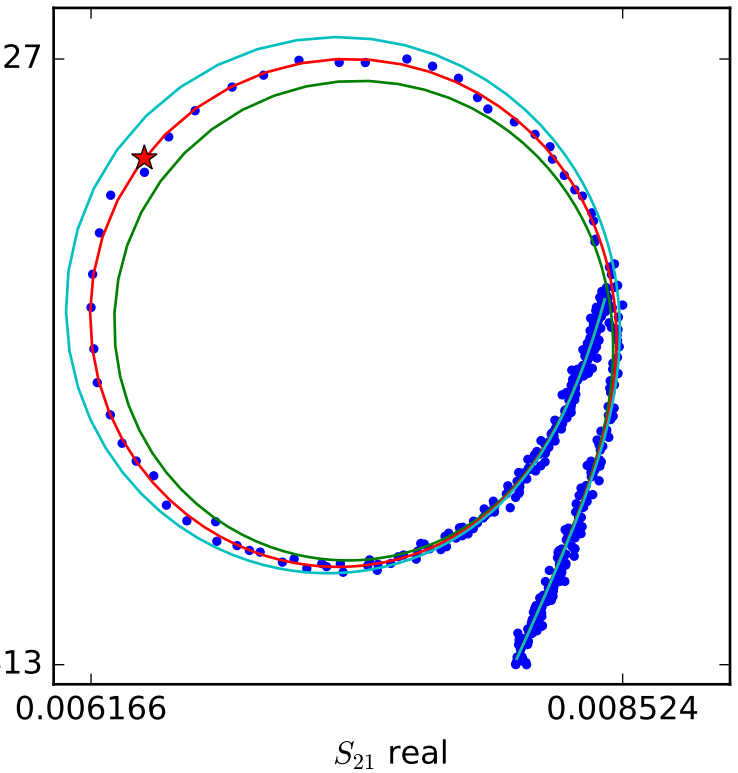


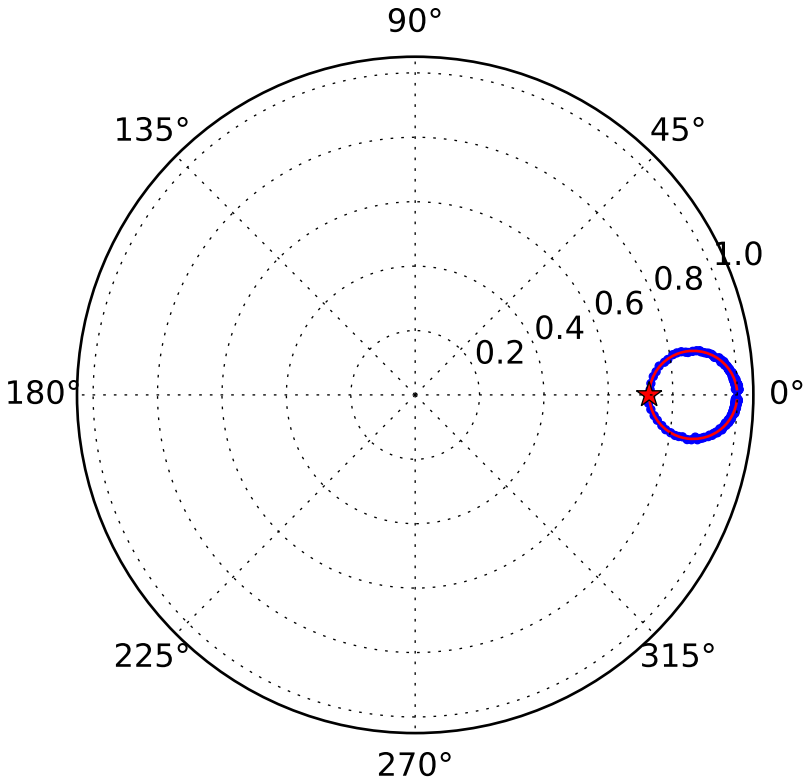


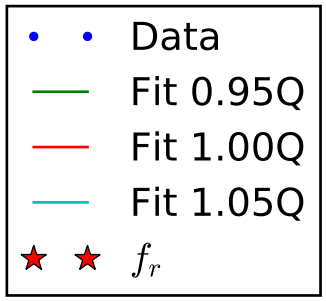
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.29823964738
Q_r = 21801.1901955
Q_c = 477383.695061
a = (-0.00870352346666-0.000328950145787j)
ϕ_0 = -0.650101038765
τ = 37.1118105639



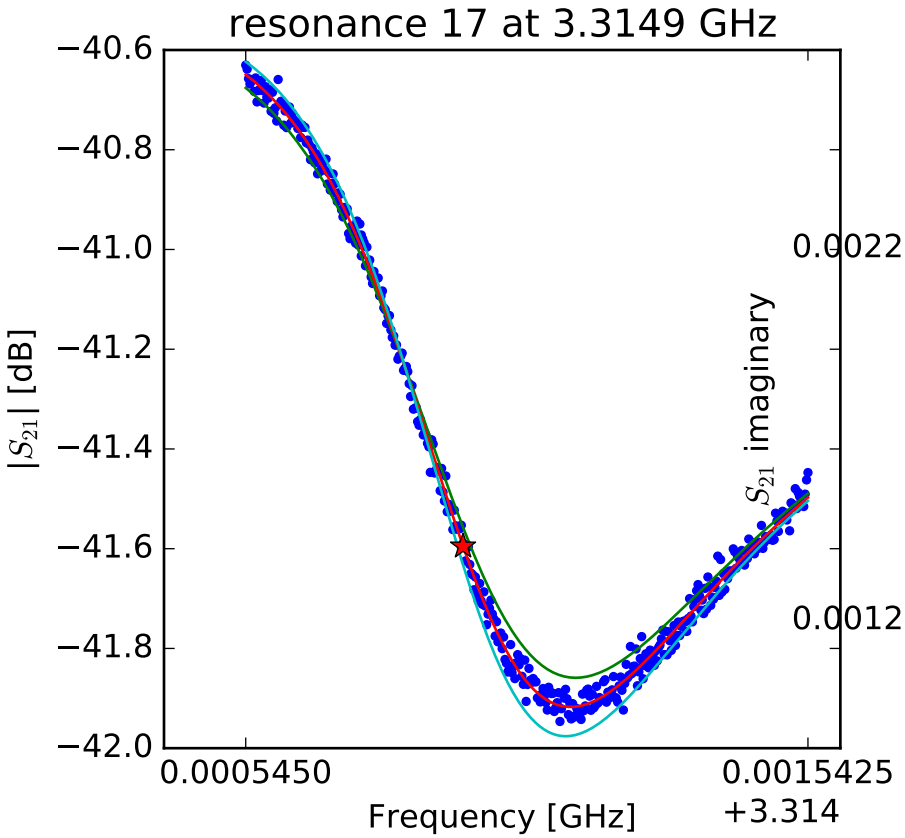


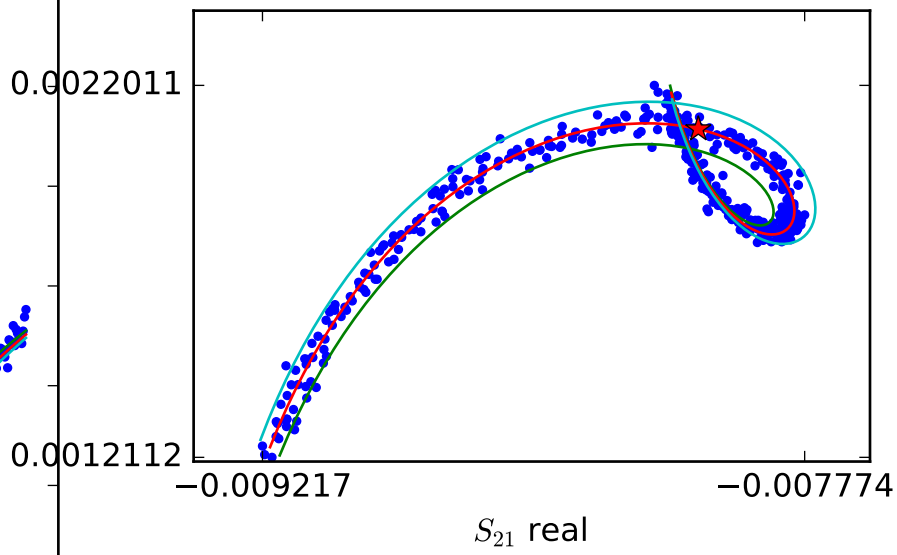


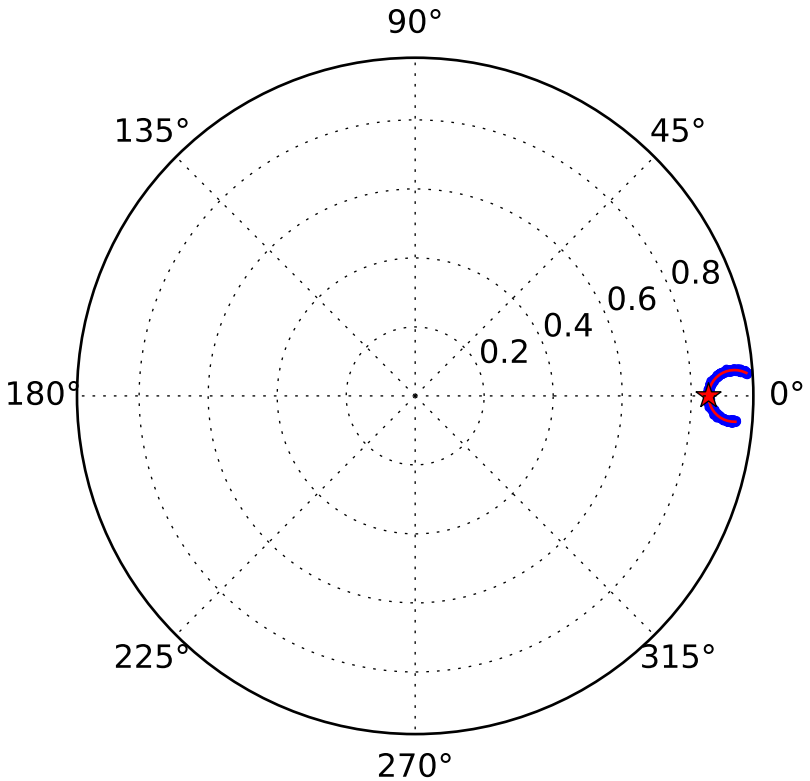


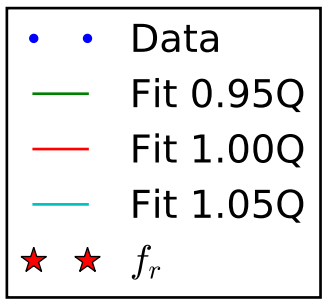
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.302363069
Q_r = 51178.9301083
Q_c = 187051.748039
a = (-0.000670802421315+0.00866629682167
ϕ_0 = -0.348542286497
τ = 35.5233172551



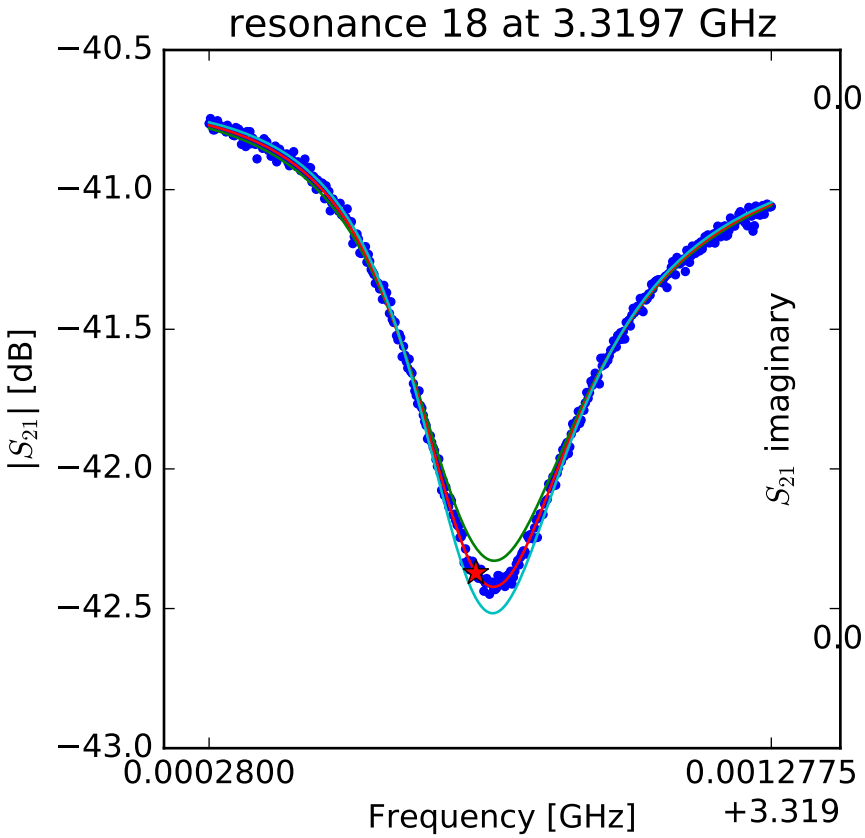


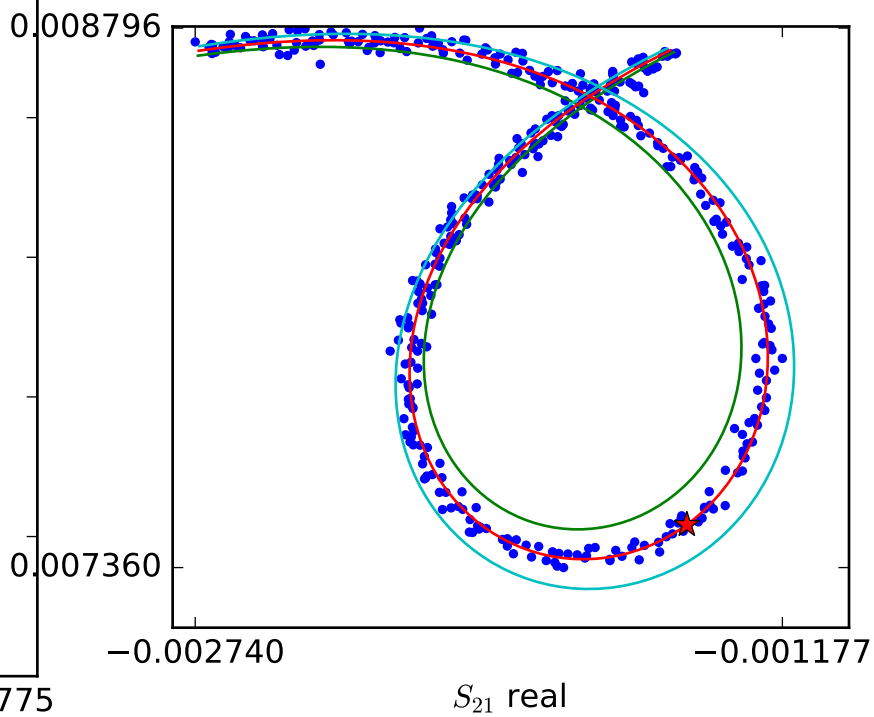


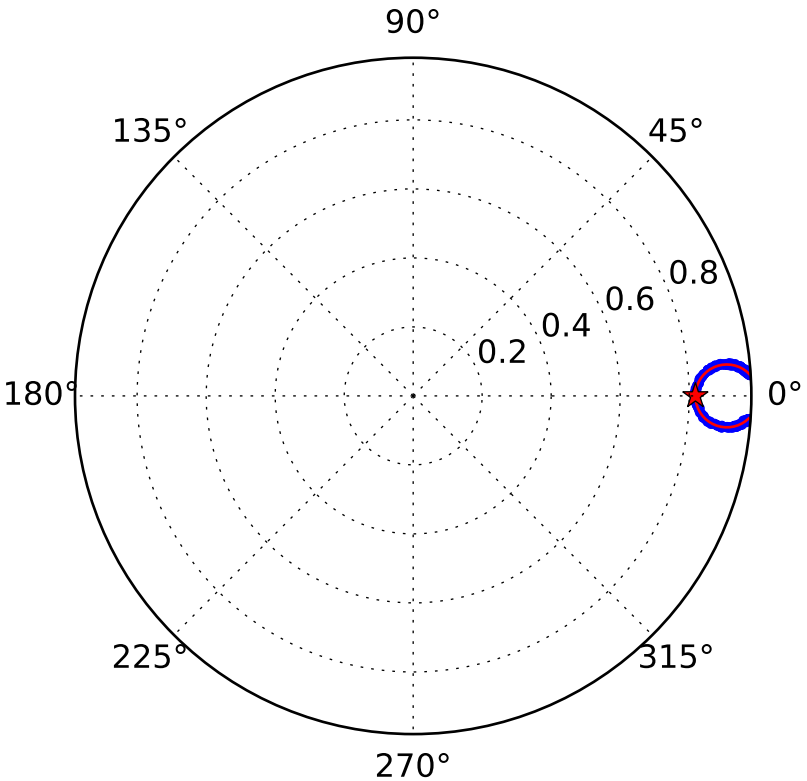


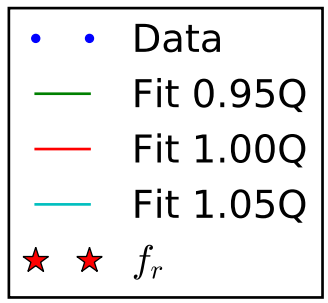
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.31493060807
Q_r = 4461.98443498
Q_c = 29771.8955895
a = (0.000830758636118+0.00908026635188j)
ϕ_0 = 0.886785953273
τ = 38.539409827



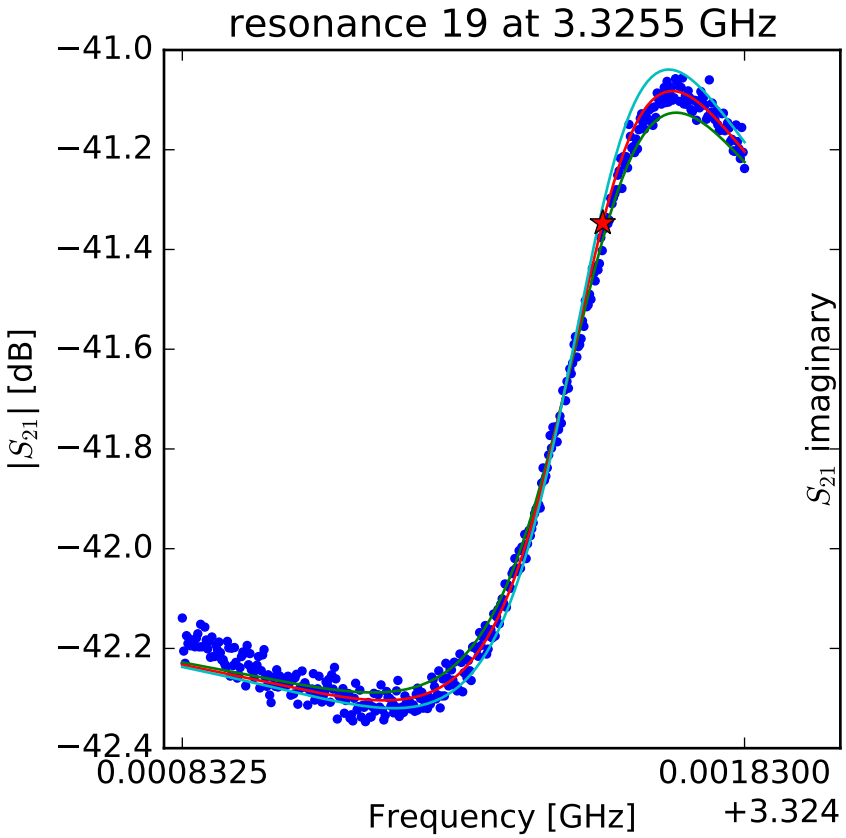


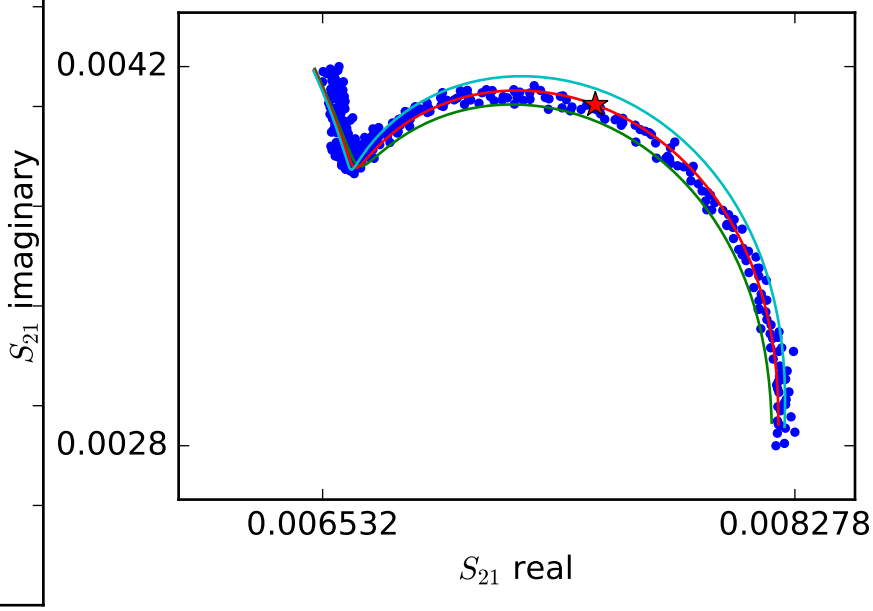


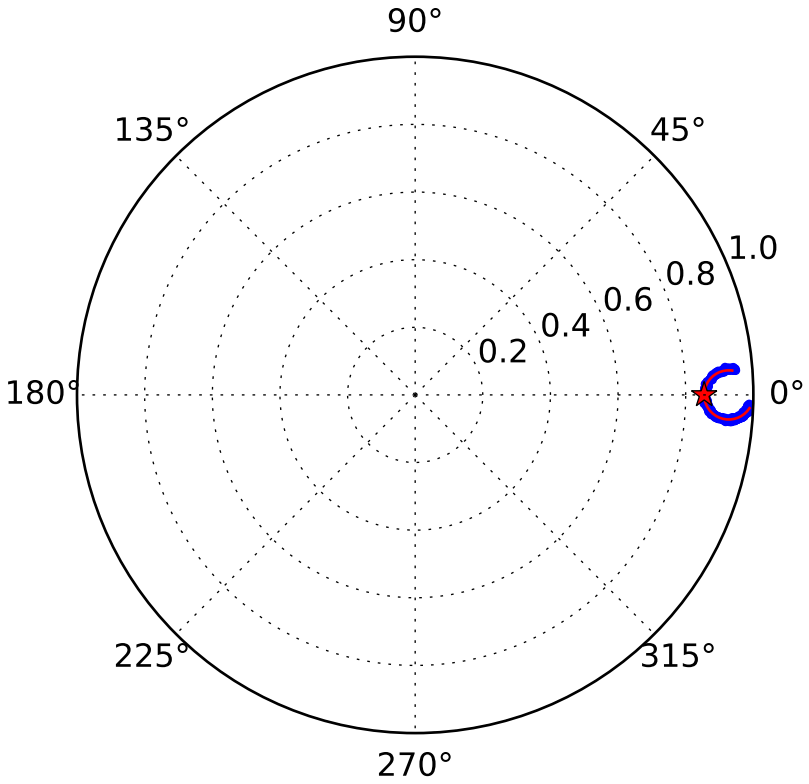


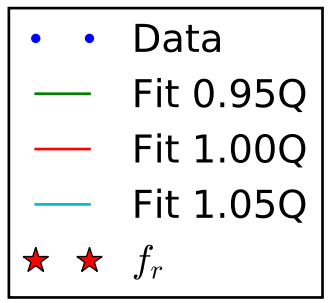
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.31975337455
Q_r = 8285.63605588
Q_c = 45484.7103202
a = (-0.00265119393486+0.00881750354159j)
ϕ_0 = 0.280379433708
τ = 41.5713567454



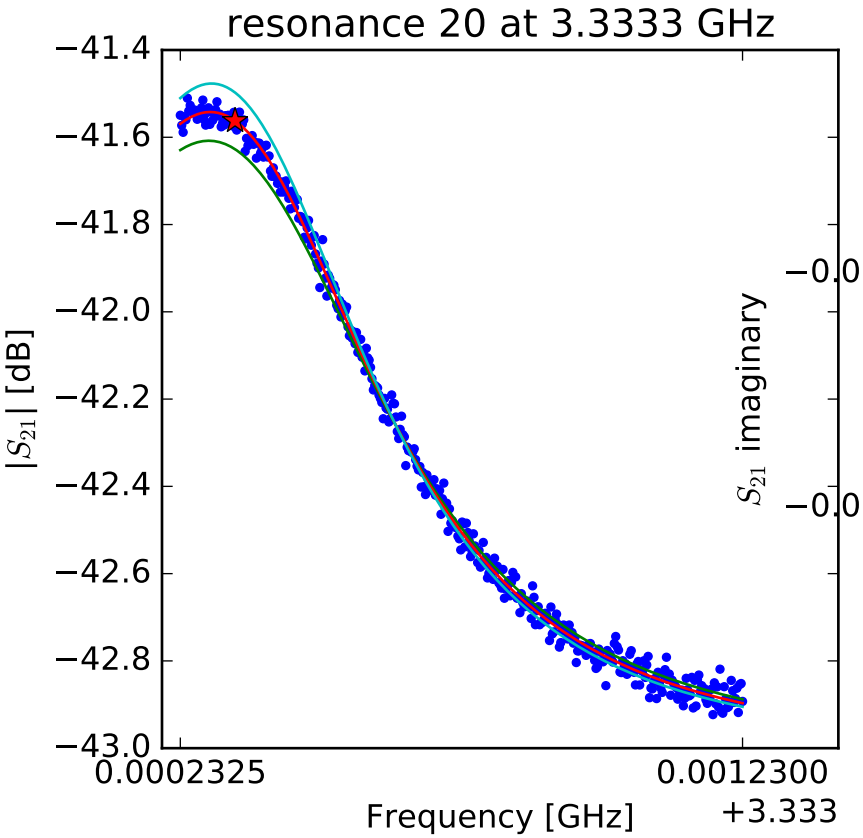


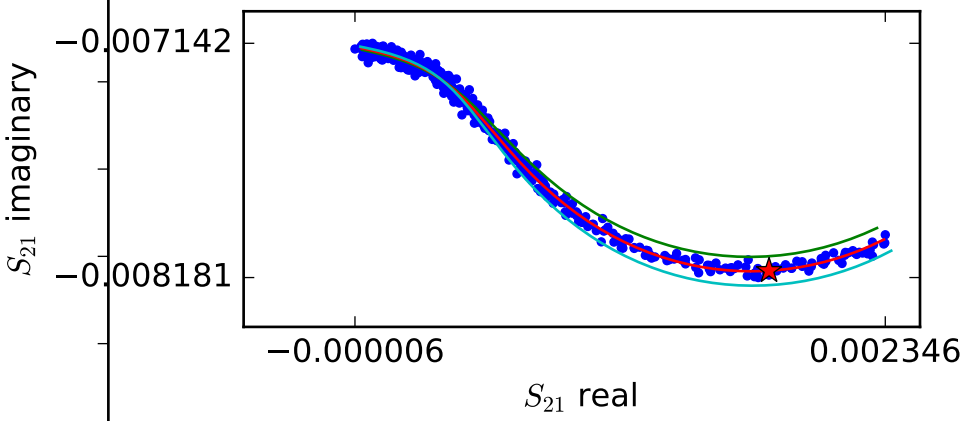


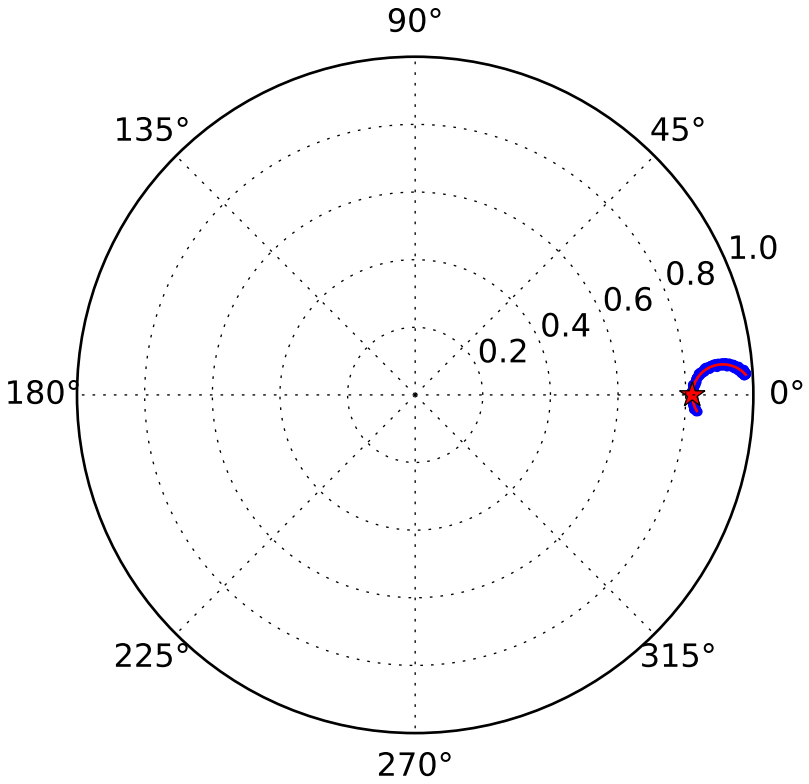


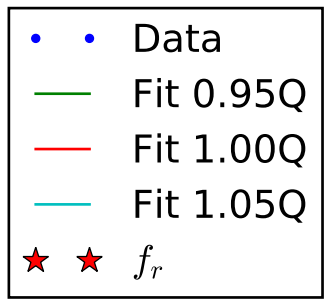
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.32557838808
Q_r = 7600.0717545
Q_c = 52248.9179622
a = (0.0035880272627+0.00711059873689j)
ϕ_0 = -2.05304652642
τ = 36.1188718923



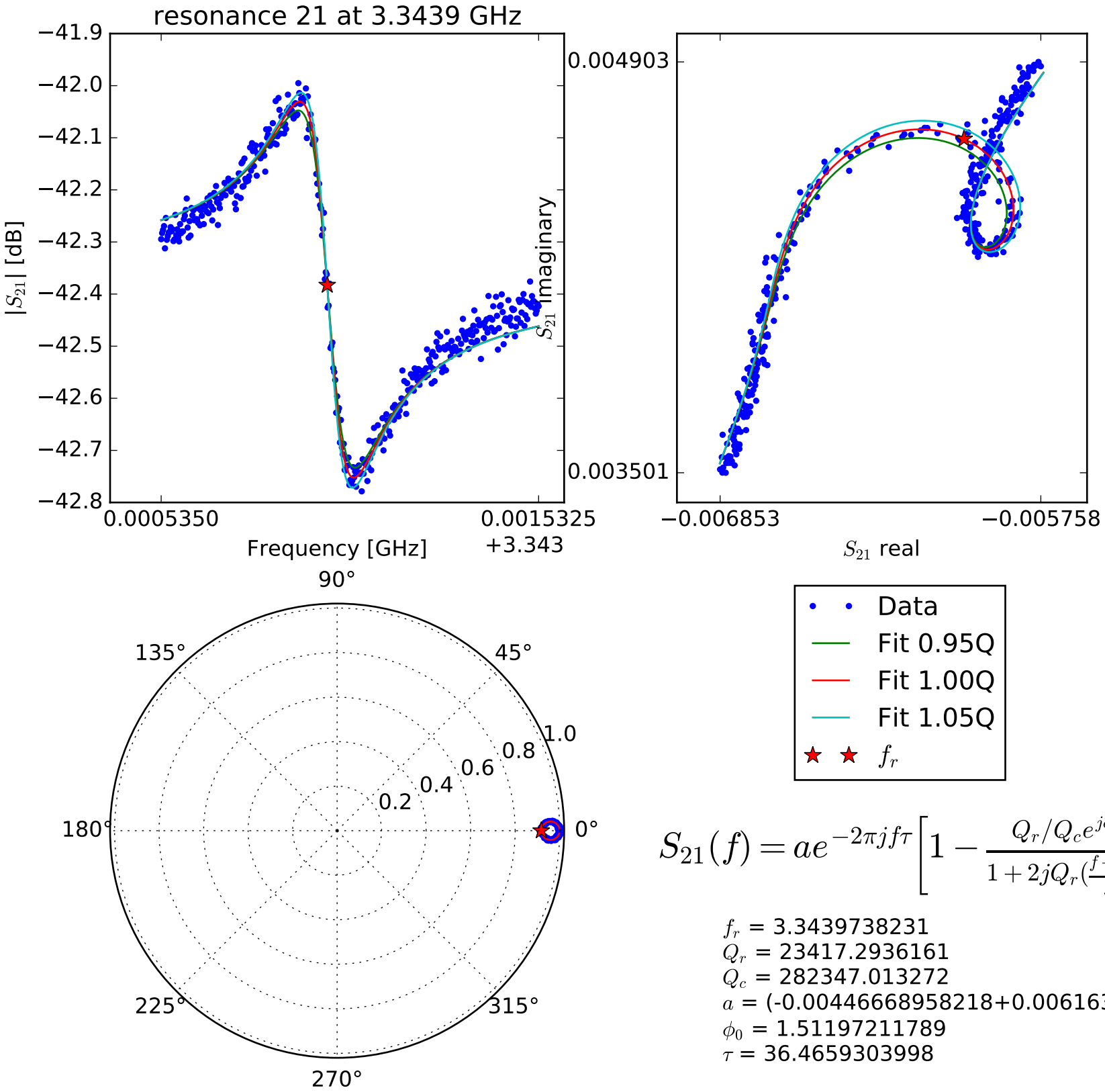






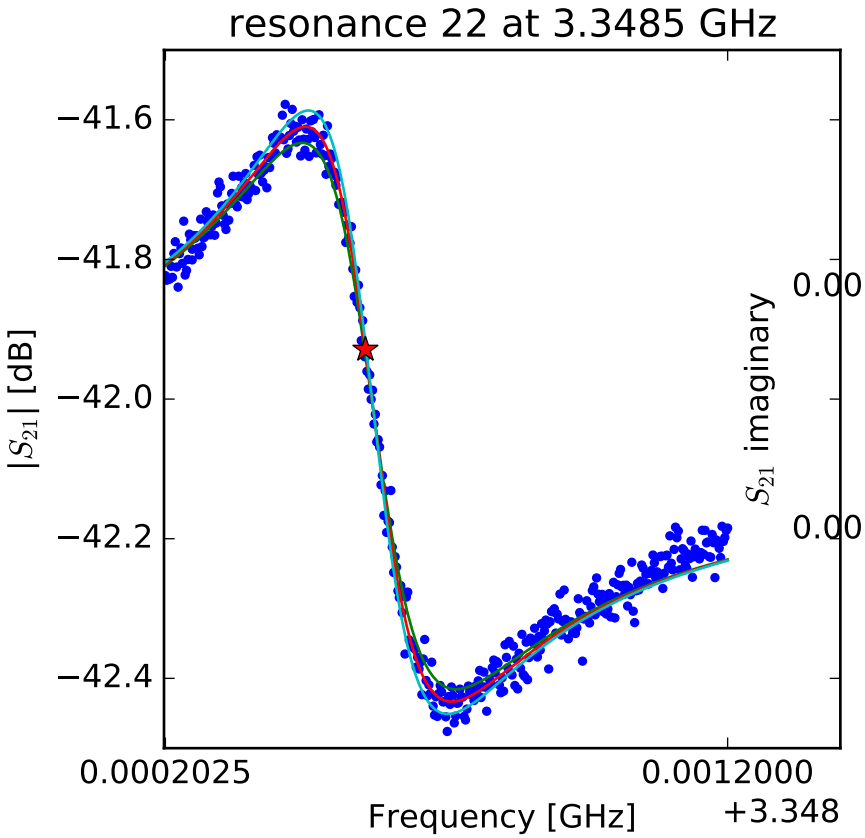
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

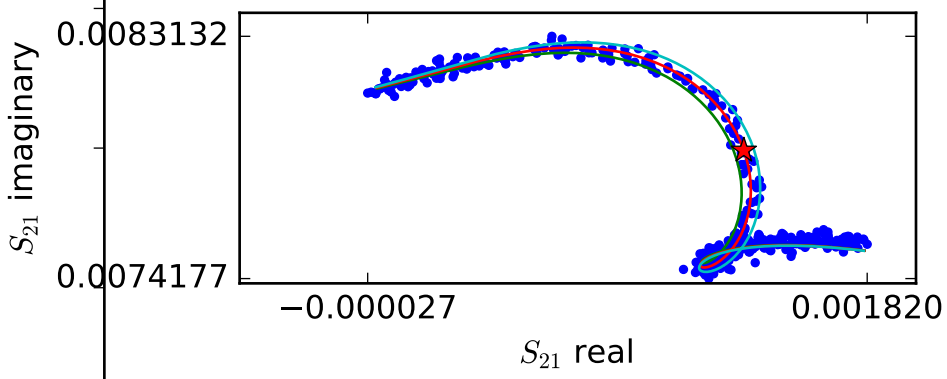
f_r = 3.33332963897
Q_r = 4870.95864117
Q_c = 26958.6176143
a = (0.000162861907787-0.00710934128268j)
ϕ_0 = -3.42063334095
τ = 34.7885608097

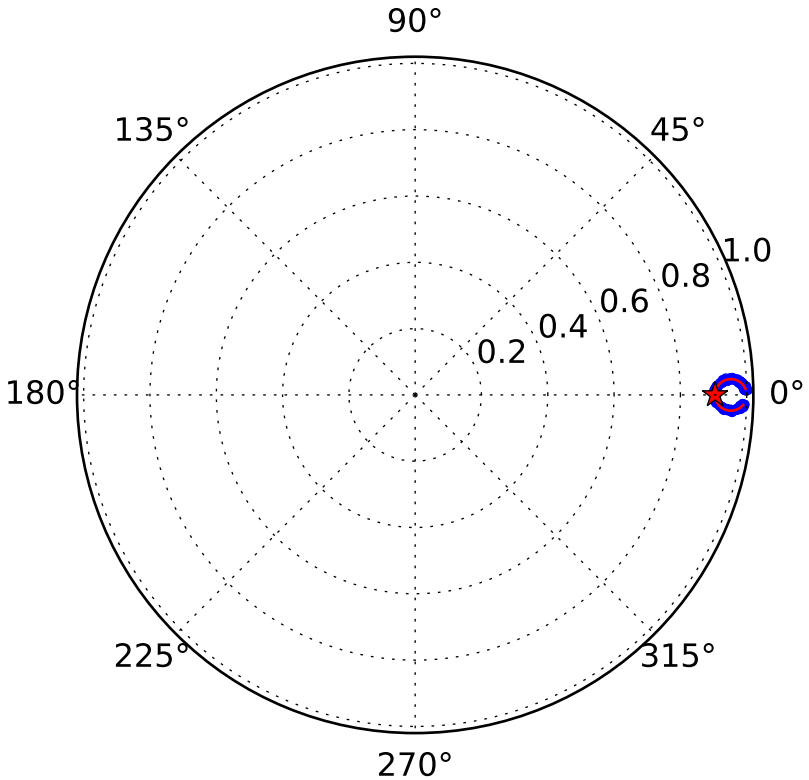


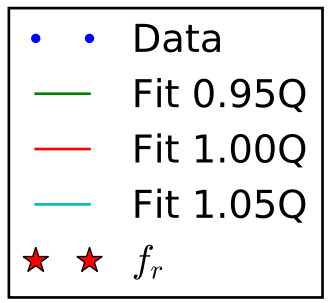
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.3439738231
Q_r = 23417.2936161
Q_c = 282347.013272
a = (-0.00446668958218+0.0061634790959j)
ϕ_0 = 1.51197211789
τ = 36.4659303998



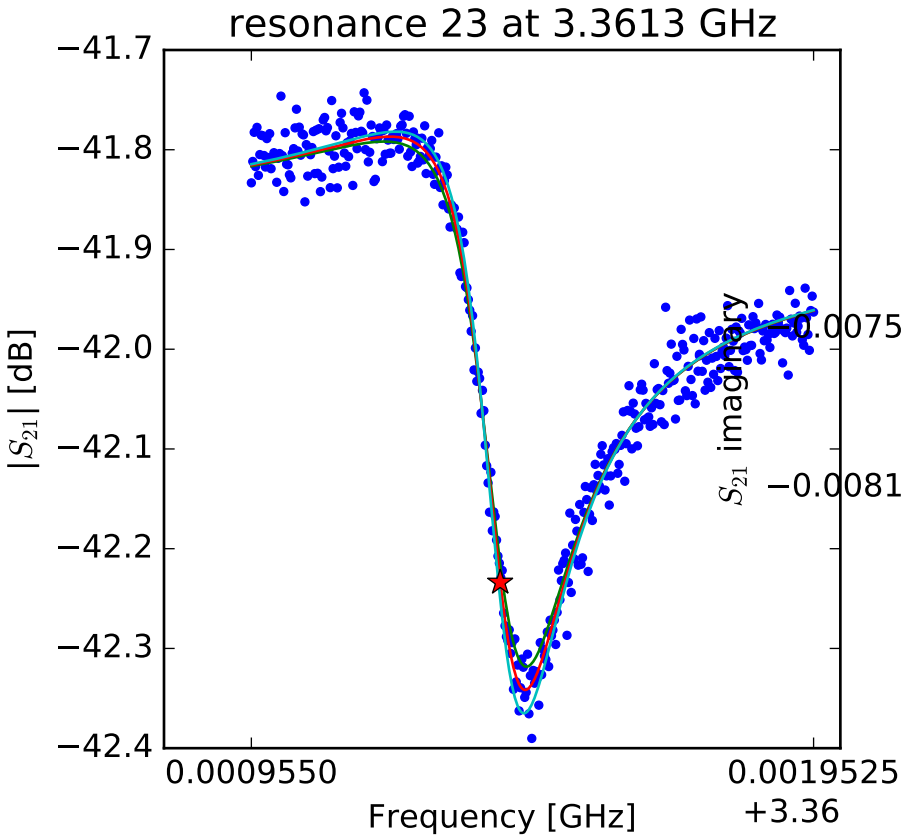


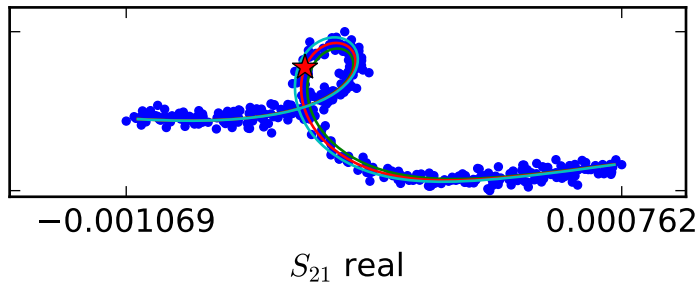


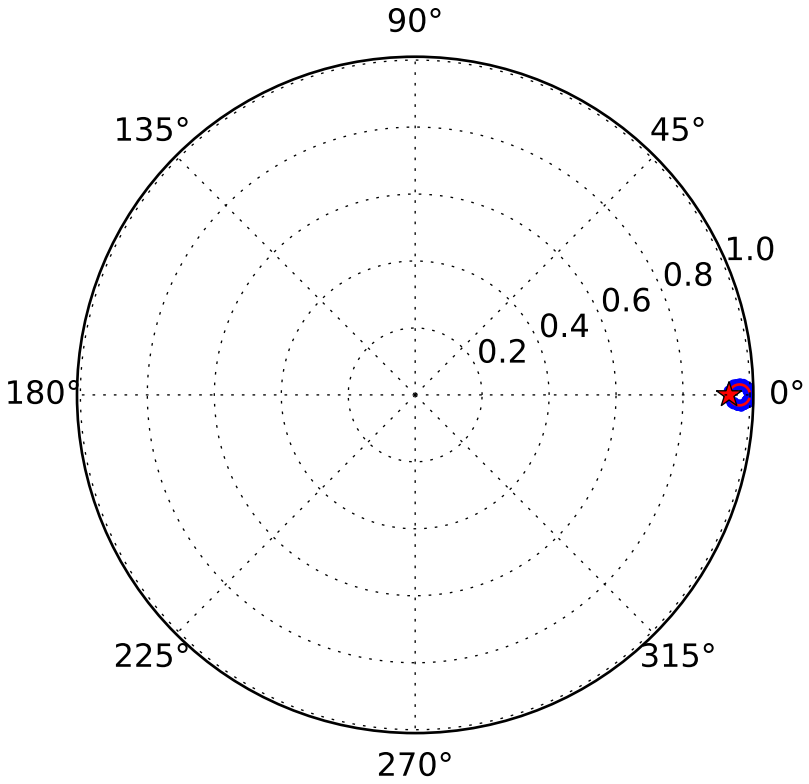


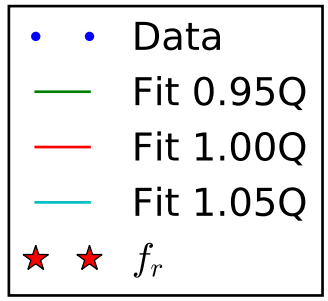
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.34855738589
Q_r = 13104.921652
Q_c = 137297.386128
a = (0.00244401969208+0.00748473395643j)
ϕ_0 = 1.7045343405
τ = 37.6168485012



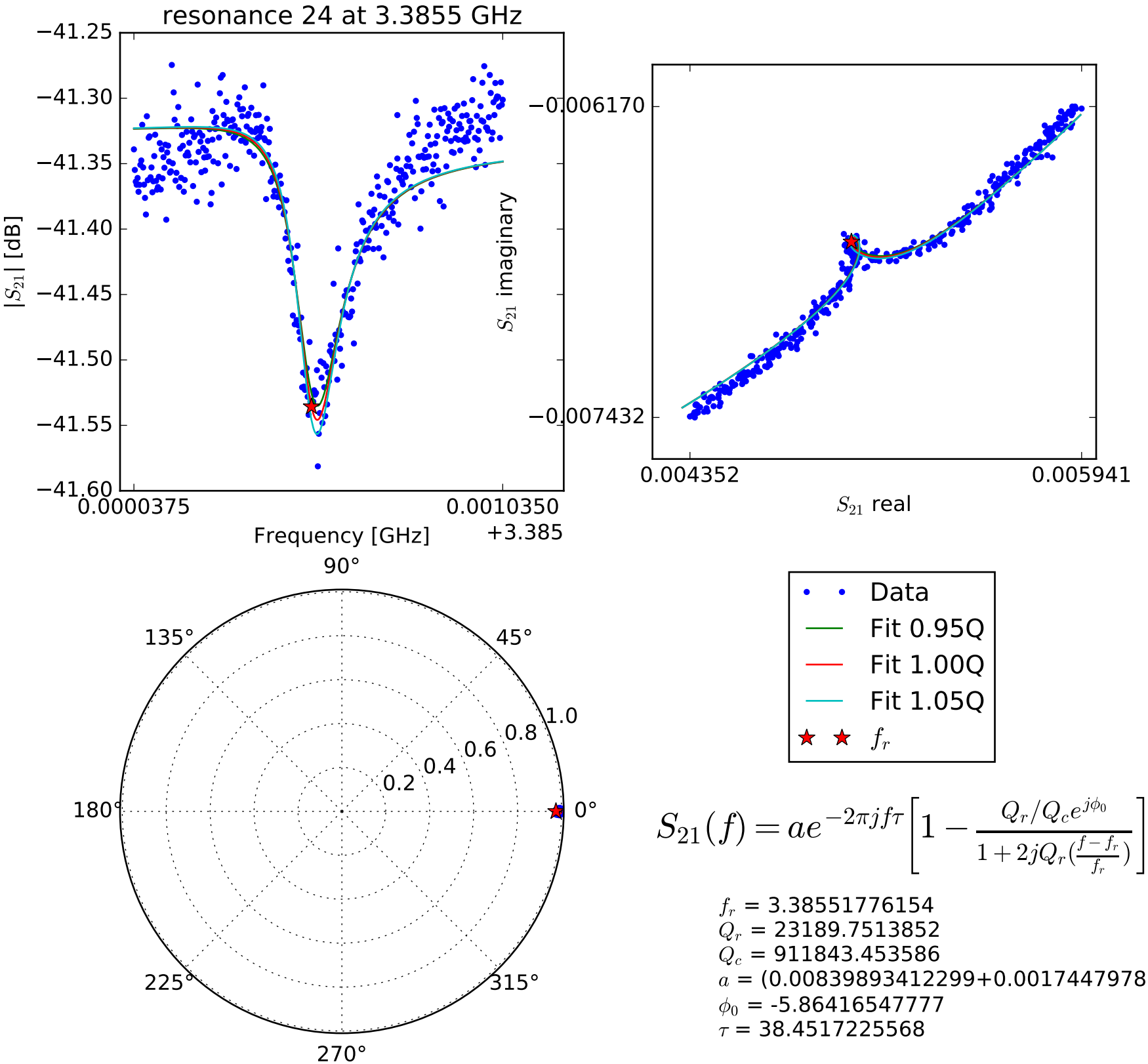






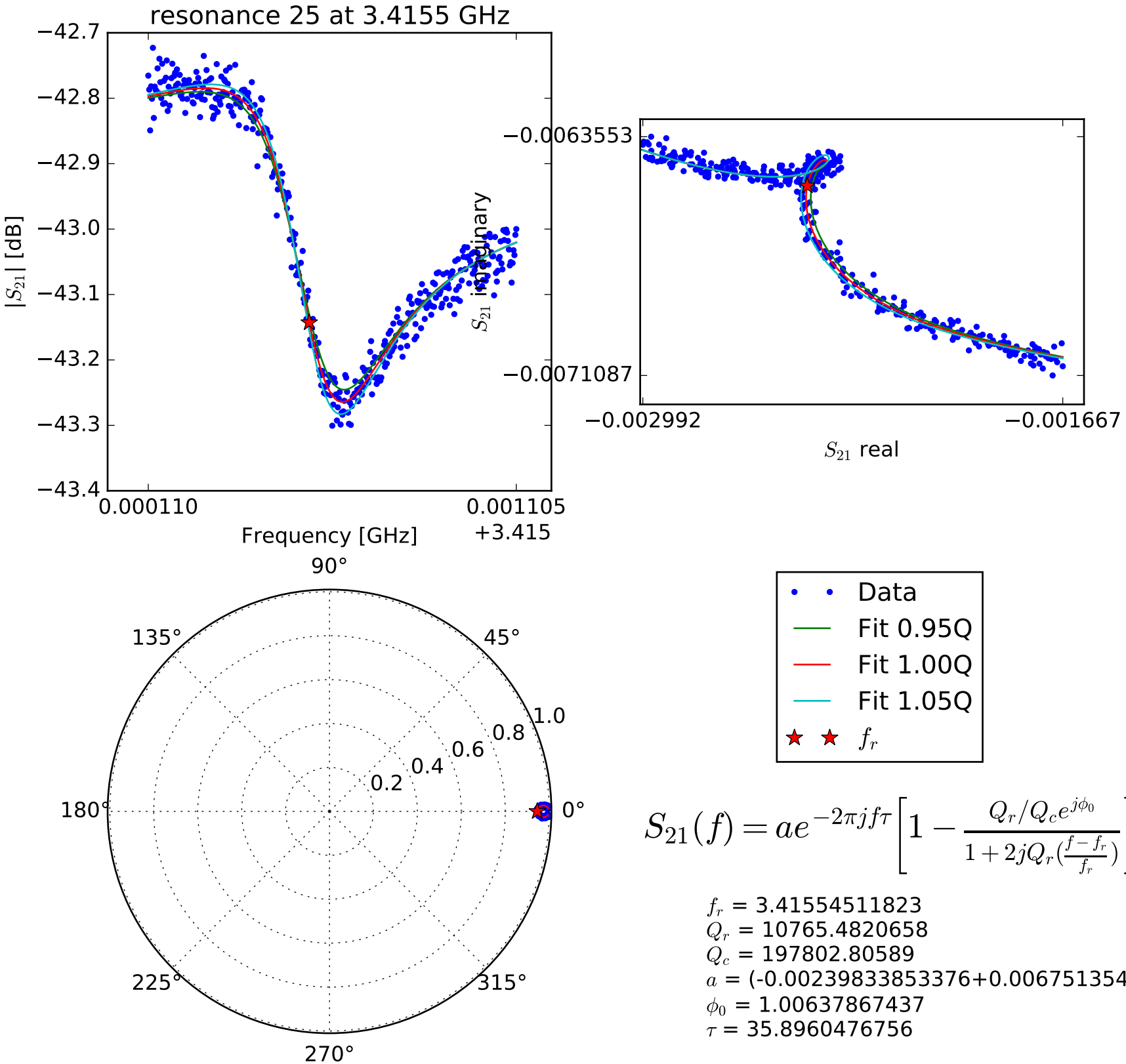
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.36139651279
Q_r = 18069.7691442
Q_c = 288778.614244
a = (0.00588563603236-0.00549207305918j)
ϕ_0 = 0.863754673299
τ = 37.5233992936



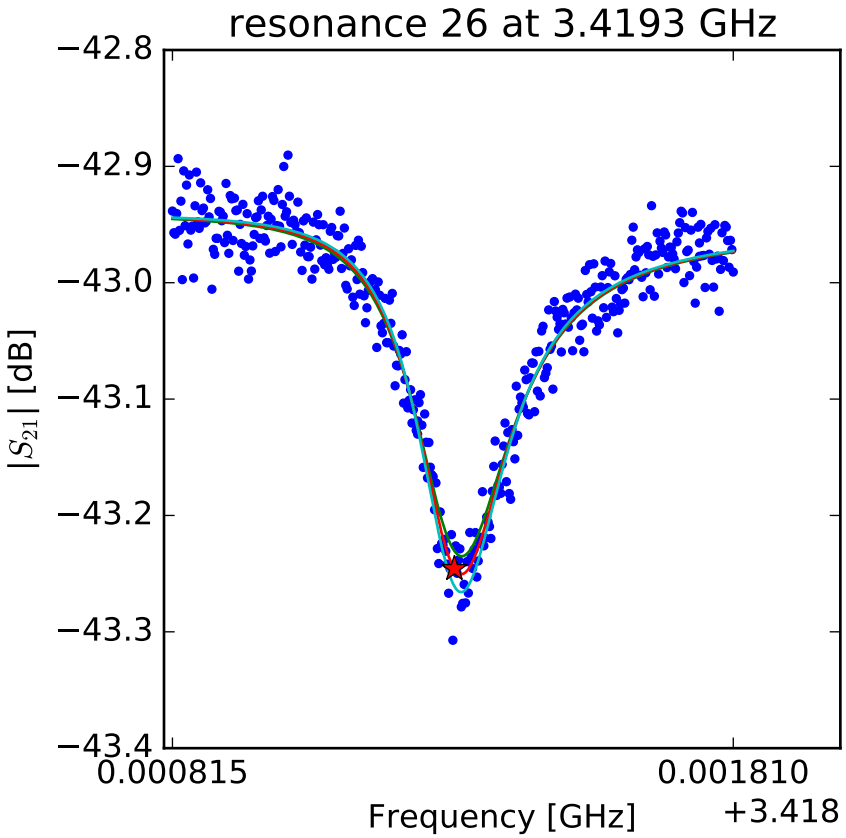
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

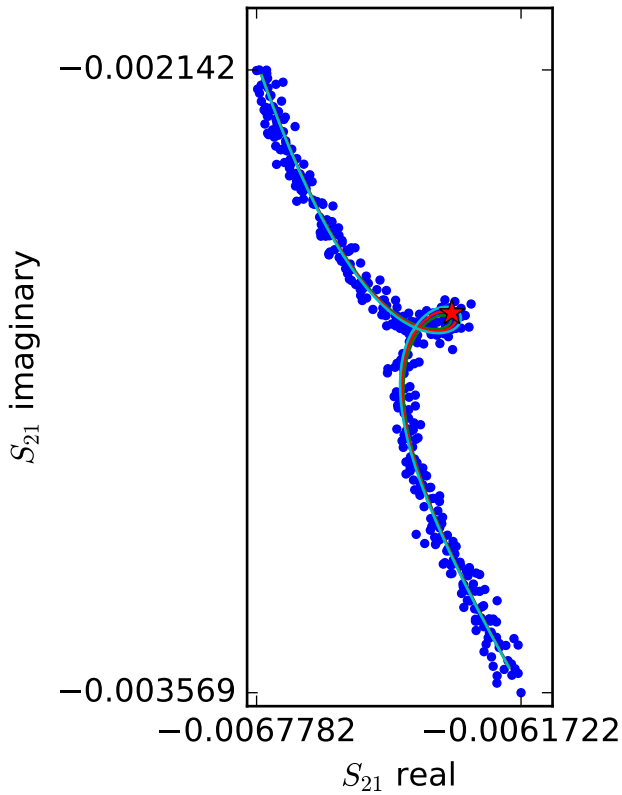
f_r = 3.38551776154
Q_r = 23189.7513852
Q_c = 911843.453586
a = (0.00839893412299+0.00174479785241j)
ϕ_0 = -5.86416547777
τ = 38.4517225568

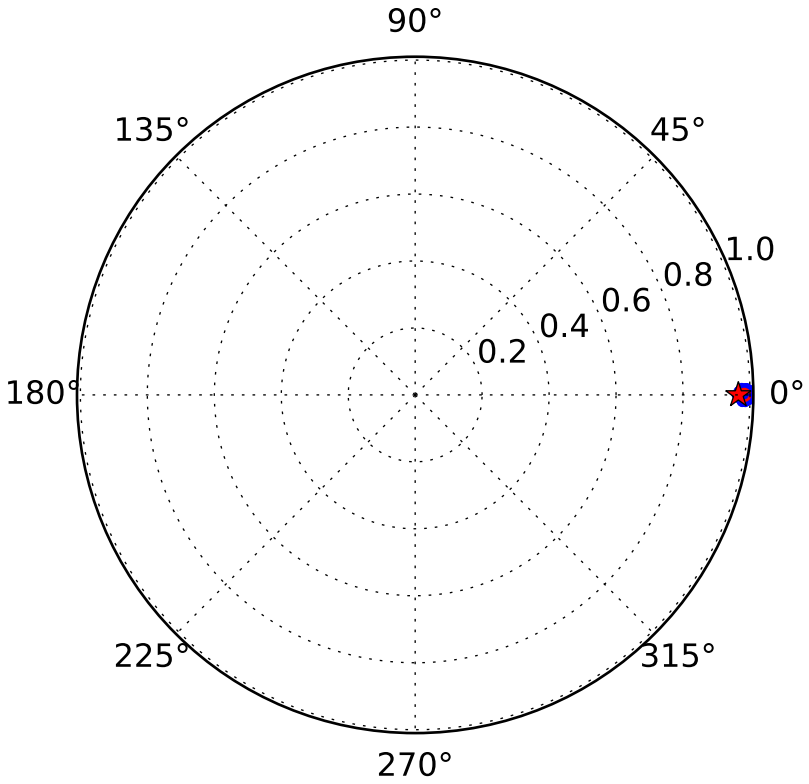


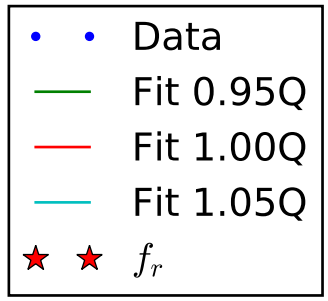
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.41554511823
Q_r = 10765.4820658
Q_c = 197802.80589
a = (-0.00239833853376+0.00675135429709j)
ϕ_0 = 1.00637867437
τ = 35.8960476756



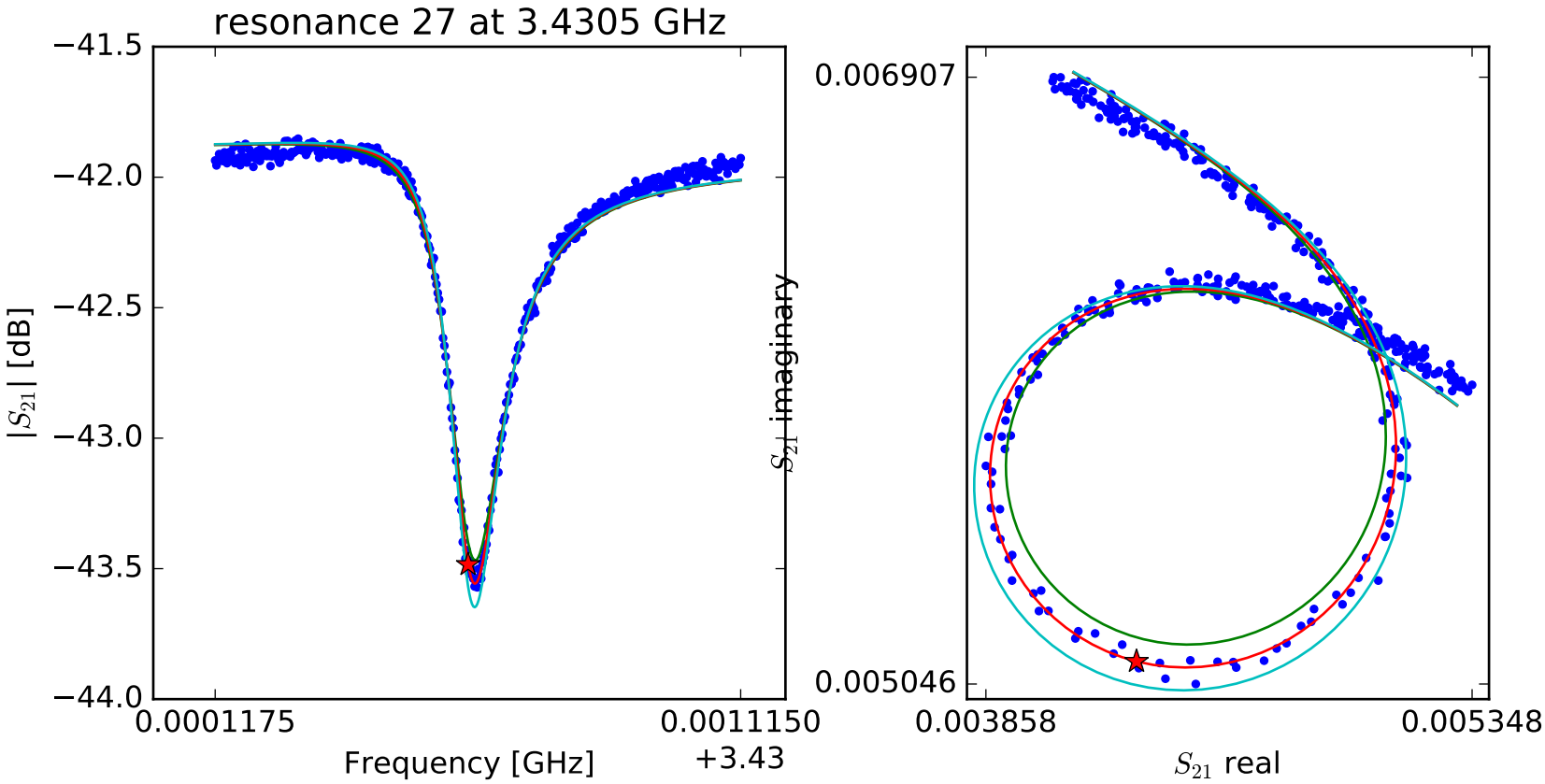


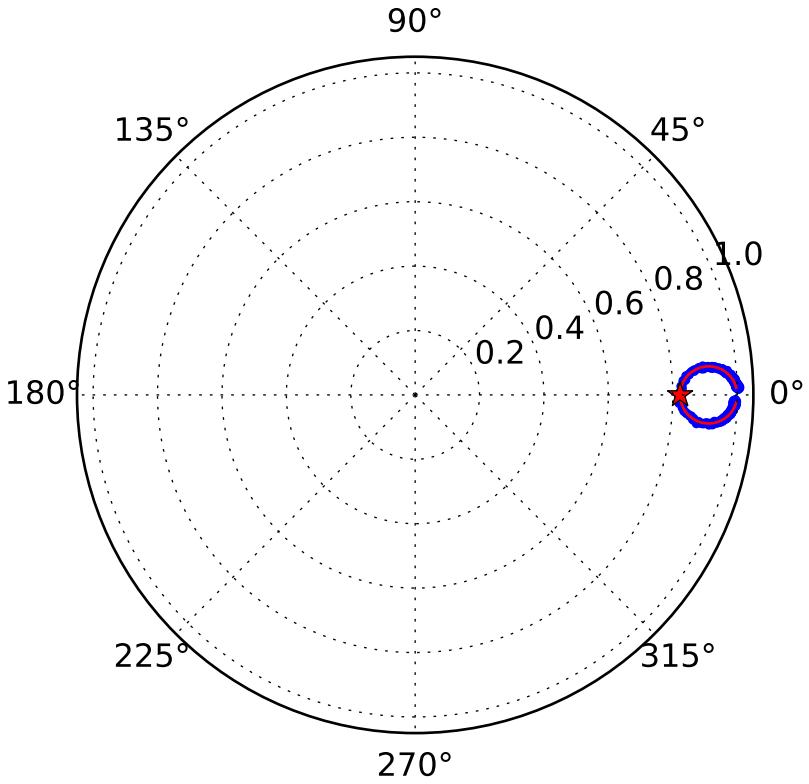


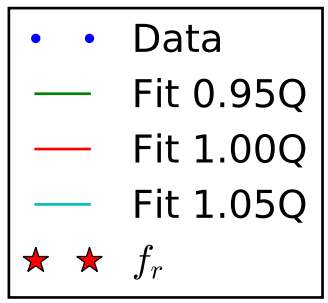


$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.41931522811
Q_r = 16730.5921515
Q_c = 480381.206293
a = (0.00466741342579+0.00538037962014j)
ϕ_0 = 0.238853599516
τ = 35.2616744363

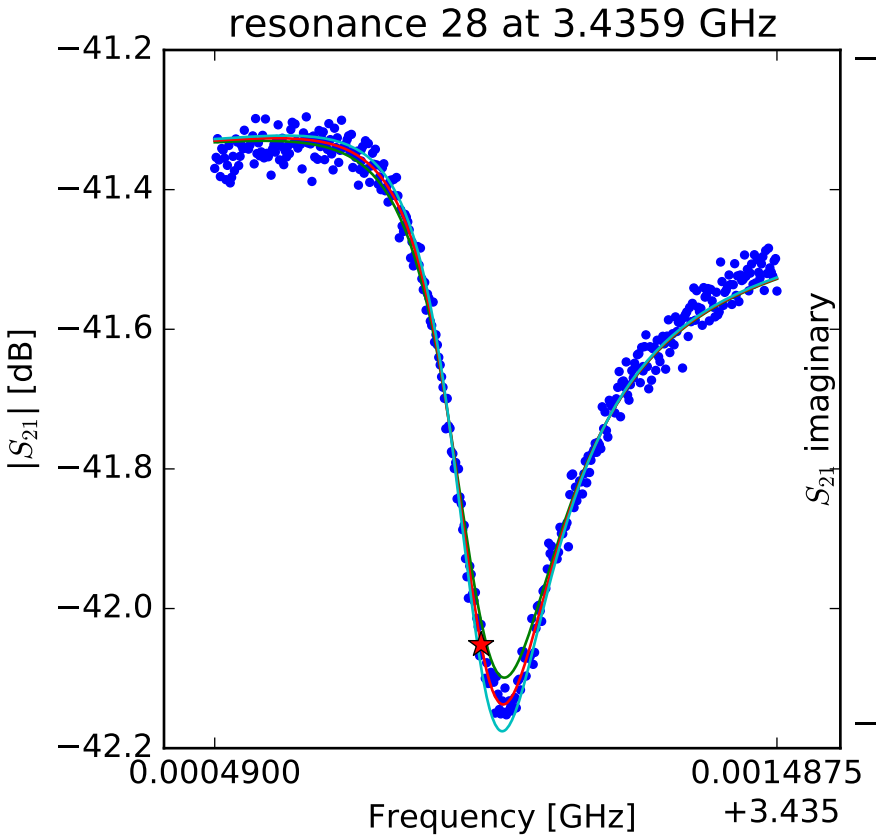


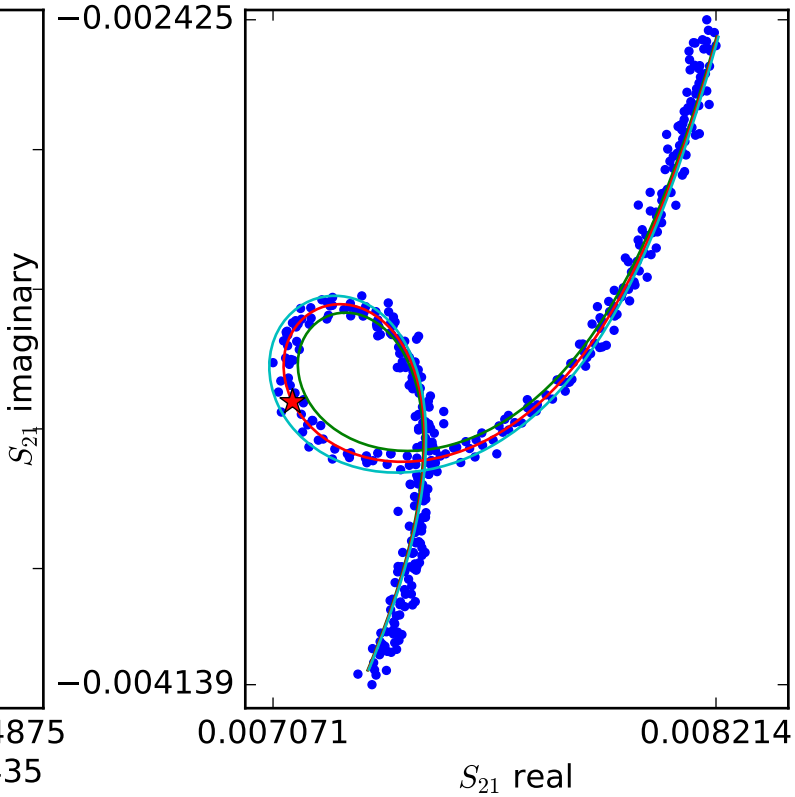


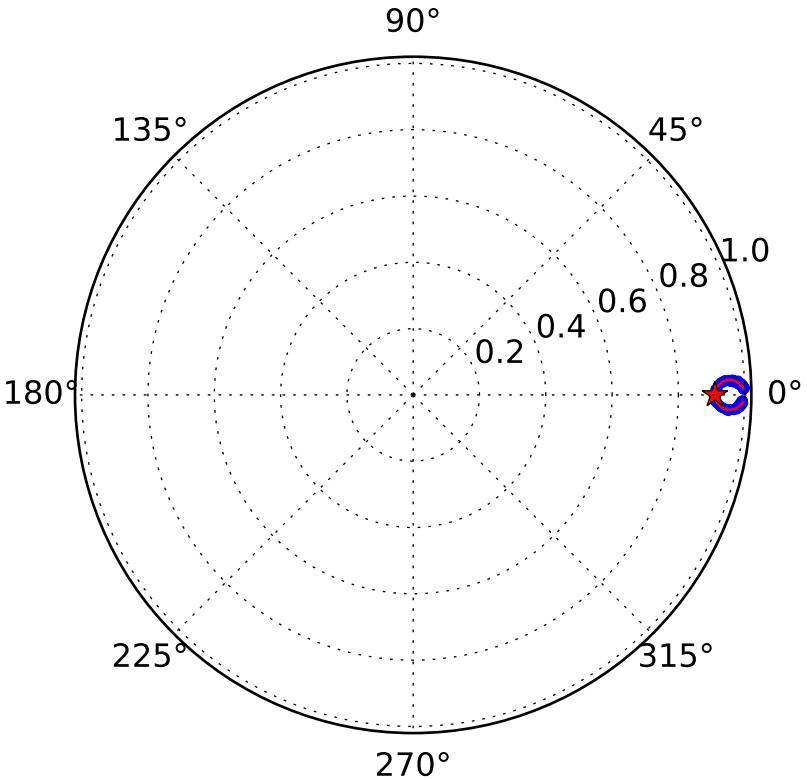


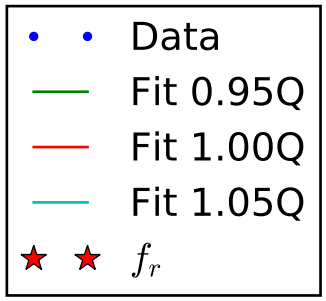
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.43059760483
Q_r = 25607.9152582
Q_c = 144260.019837
a = (0.00263917936803-0.00756825126247j)
ϕ_0 = 0.34830972304
τ = 38.0847505255



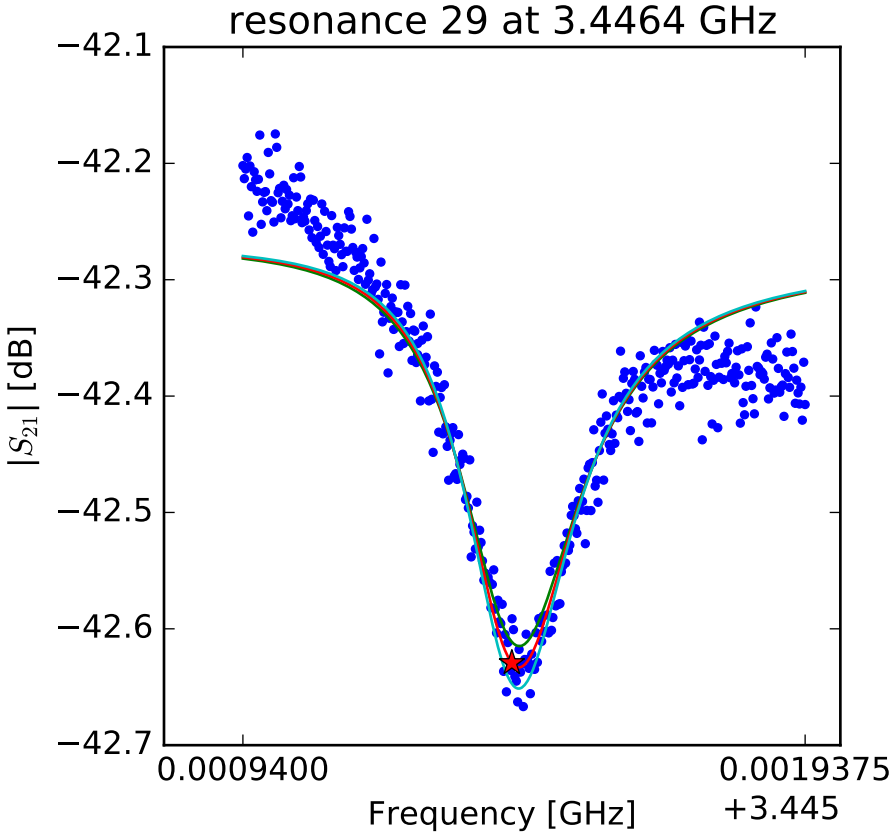


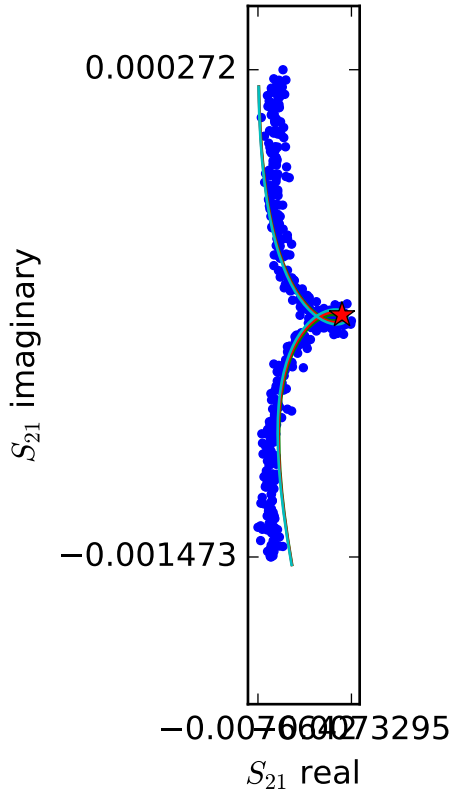


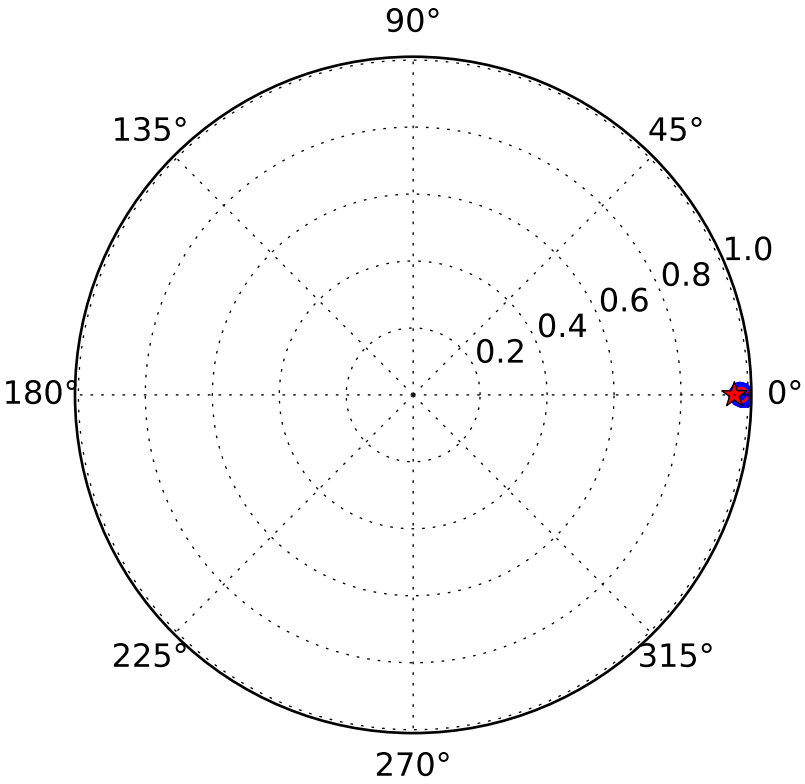


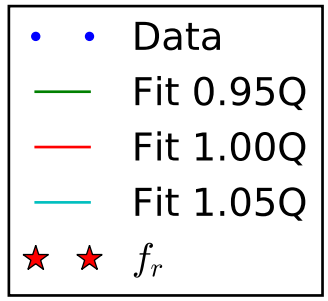
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.43596266942
Q_r = 14349.1100431
Q_c = 159631.178655
a = (-0.000275615621125-0.00850838268529j)
ϕ_0 = 0.606118197739
τ = 40.3983230805



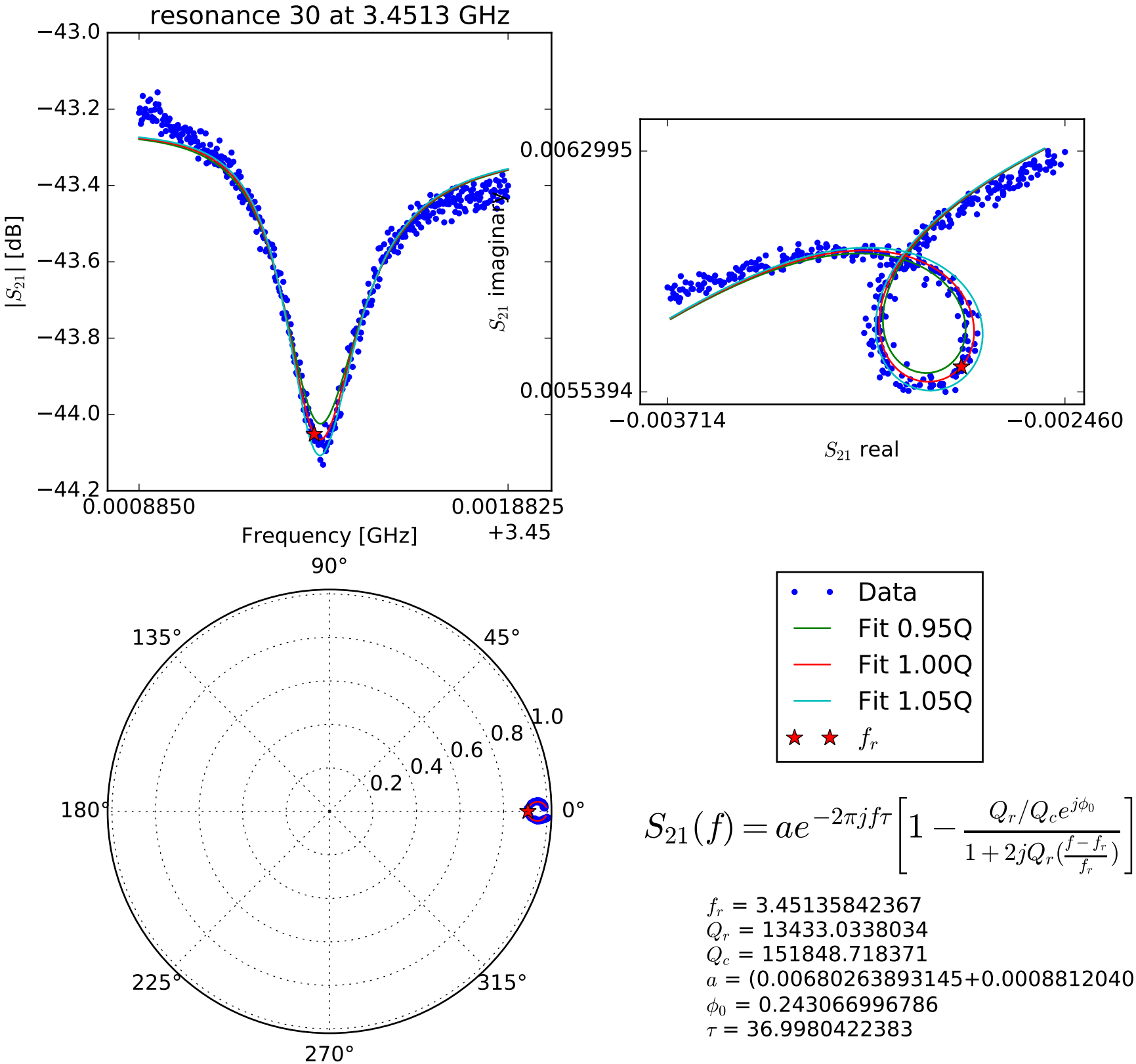






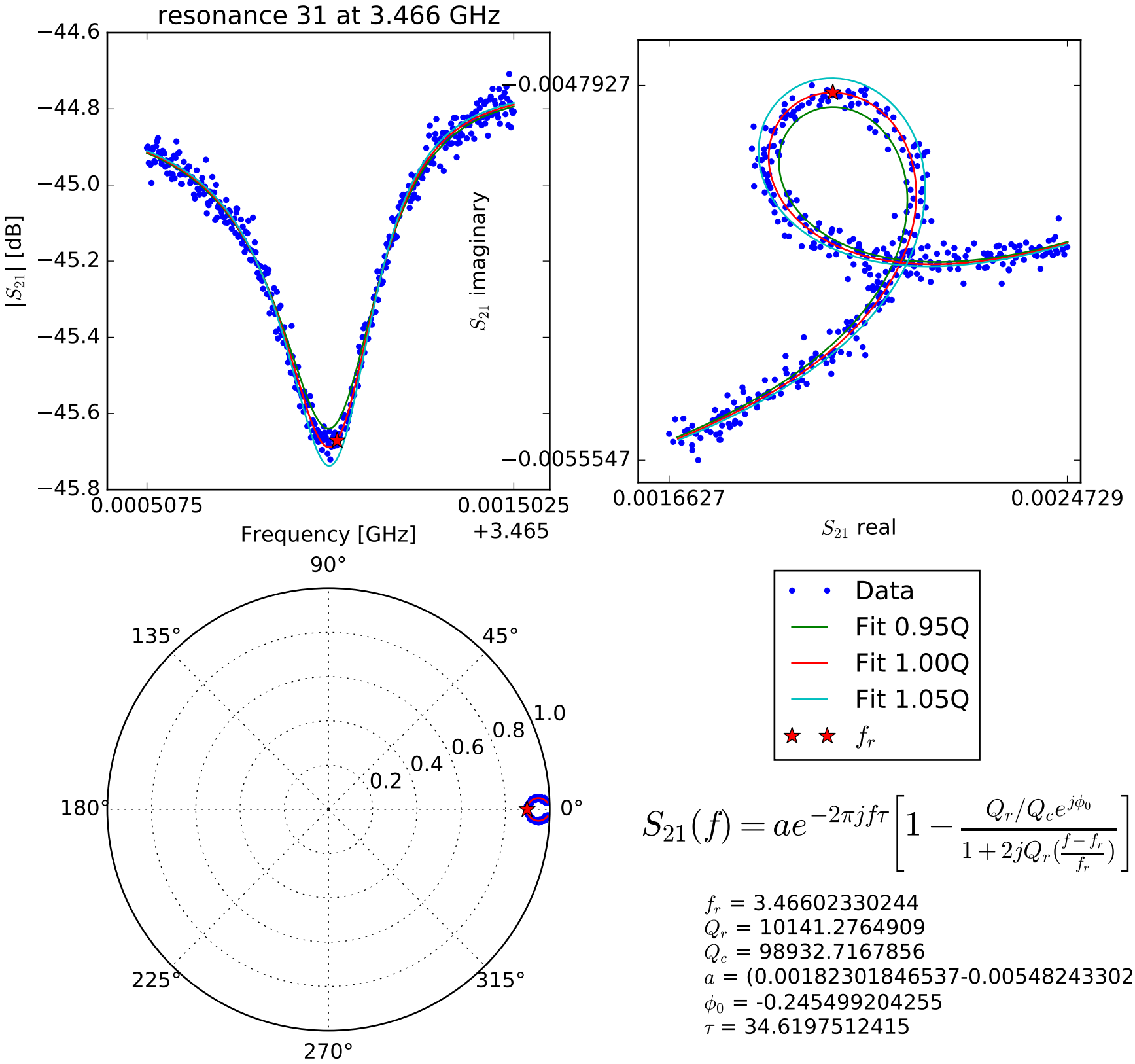
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.44641715277
Q_r = 13824.3726953
Q_c = 339814.726372
a = (0.00658033145368+0.00398858118858j)
ϕ_0 = 0.198864901157
τ = 38.7568638351



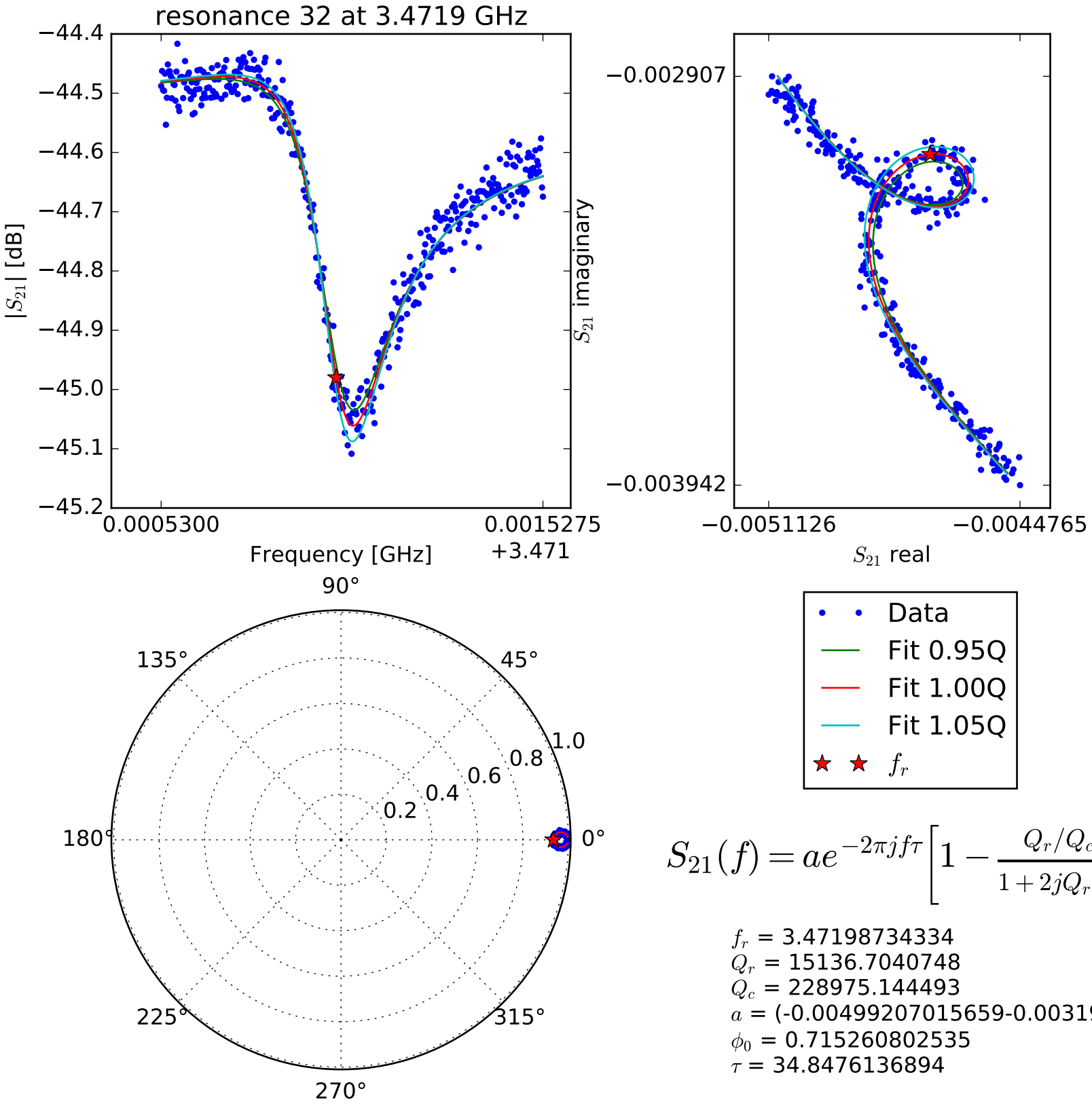
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.45135842367
Q_r = 13433.0338034
Q_c = 151848.718371
a = (0.00680263893145+0.000881204080909j
ϕ_0 = 0.243066996786
τ = 36.9980422383



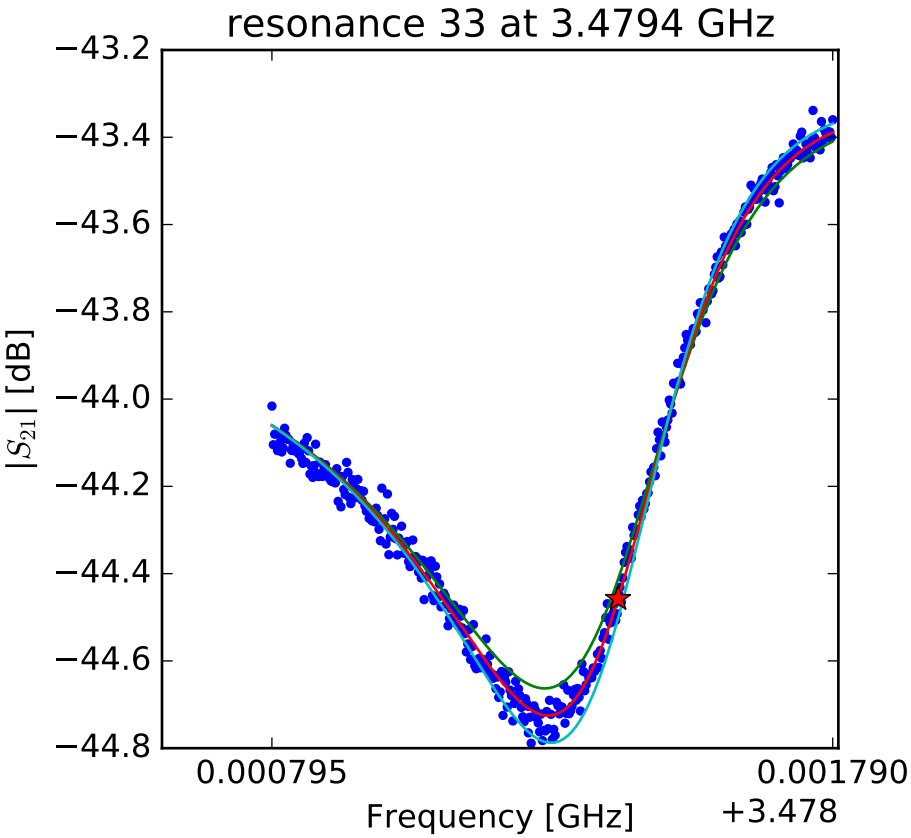
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

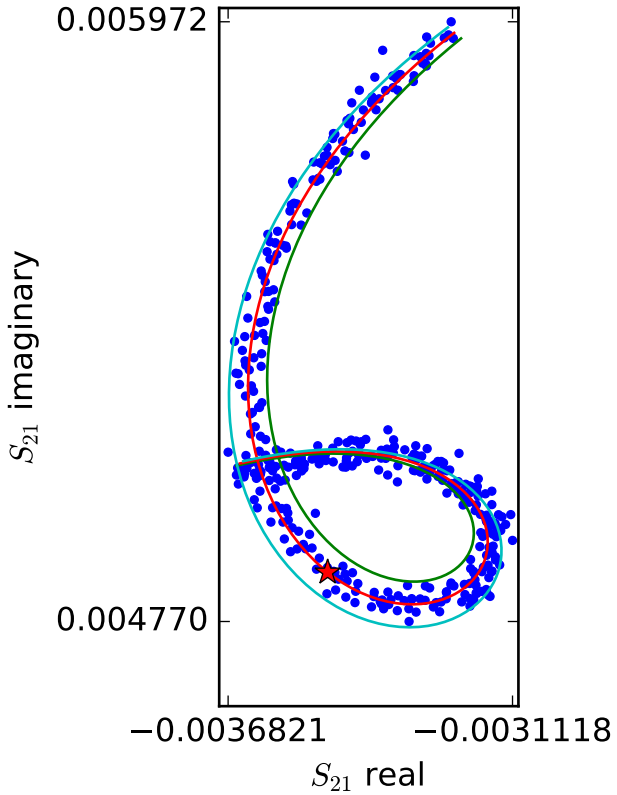
f_r = 3.46602330244
Q_r = 10141.2764909
Q_c = 98932.7167856
a = (0.00182301846537-0.00548243302461j)
ϕ_0 = -0.245499204255
τ = 34.6197512415

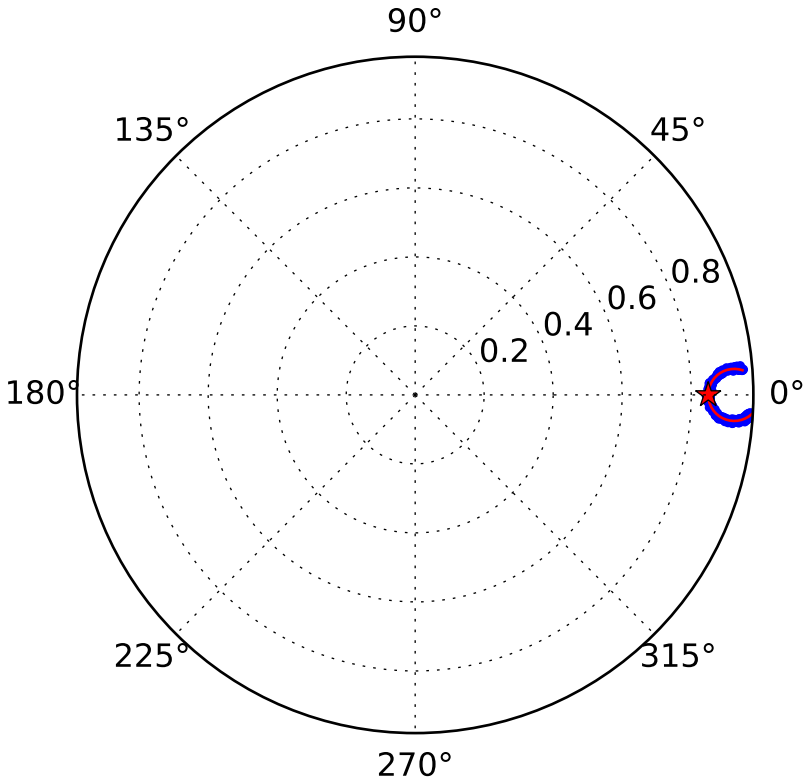


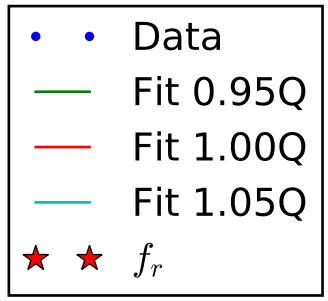
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.47198734334
Q_r = 15136.7040748
Q_c = 228975.144493
a = (-0.00499207015659-0.00319366531999j)
ϕ_0 = 0.715260802535
τ = 34.8476136894



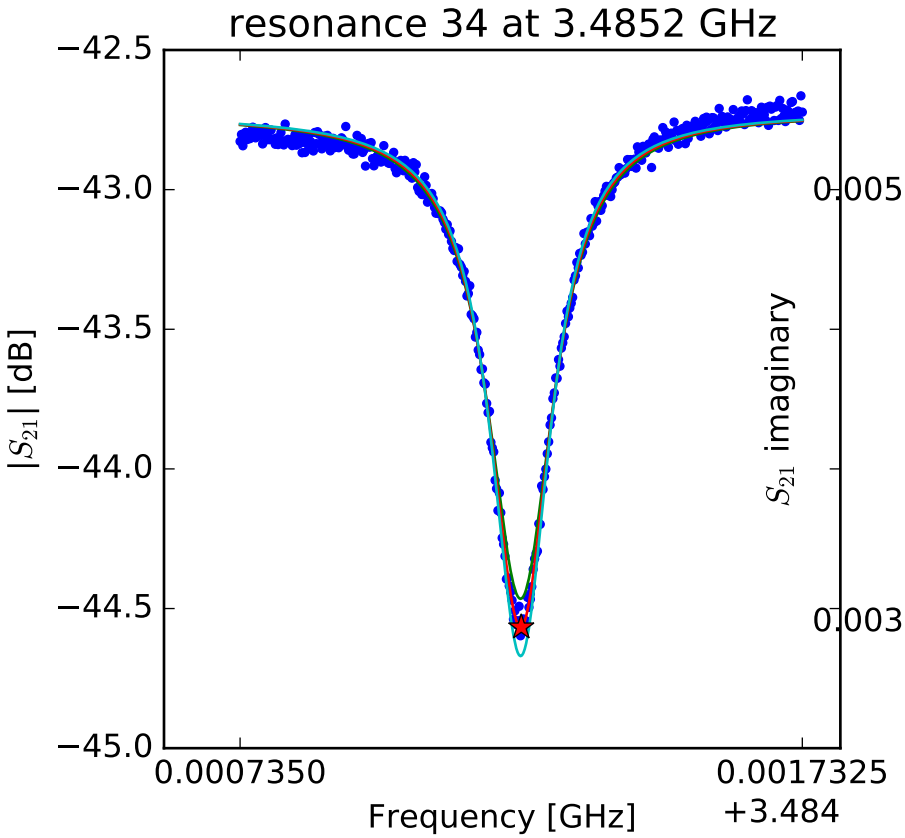


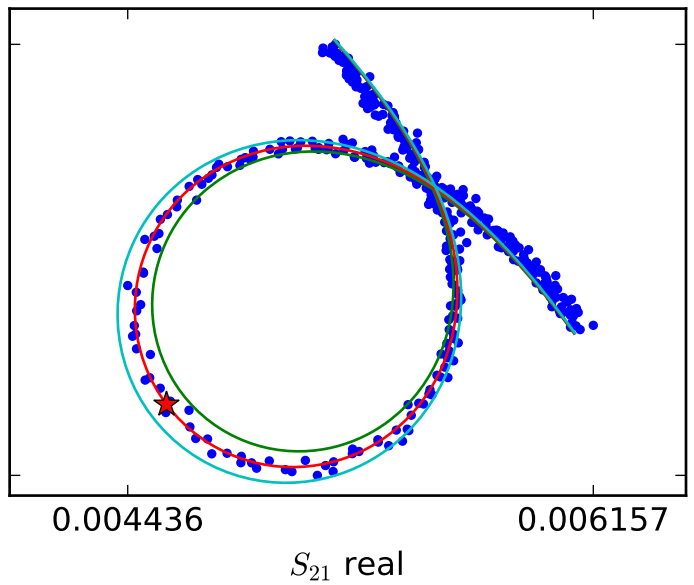


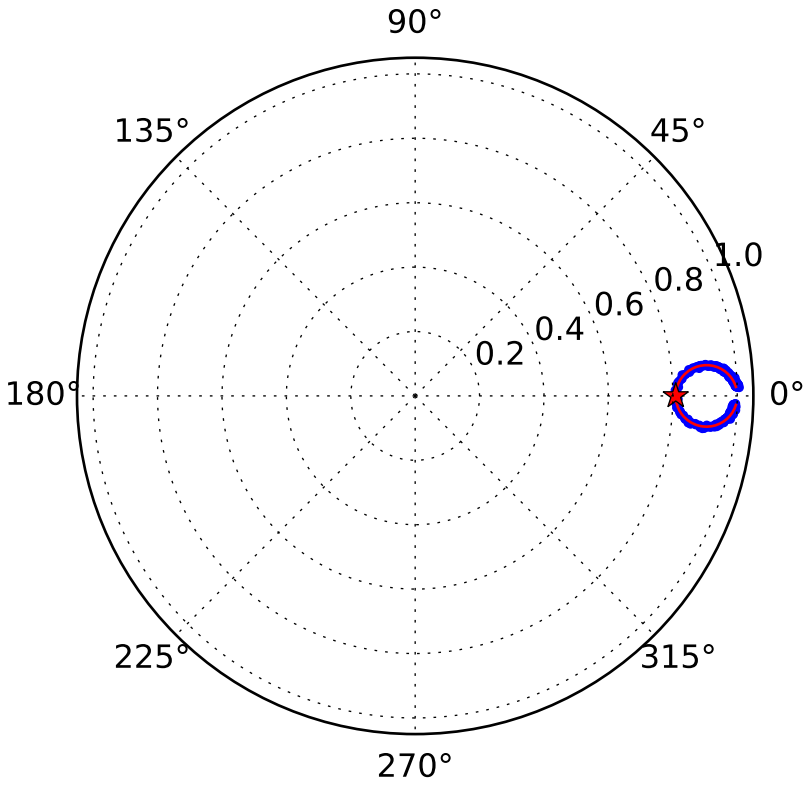


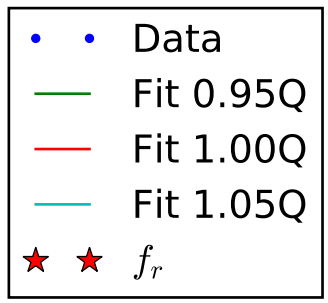
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.47940925014
Q_r = 6327.05895751
Q_c = 41942.5027509
a = (0.00650990169323+0.00134659677069j)
ϕ_0 = -0.791793569624
τ = 37.5646119951



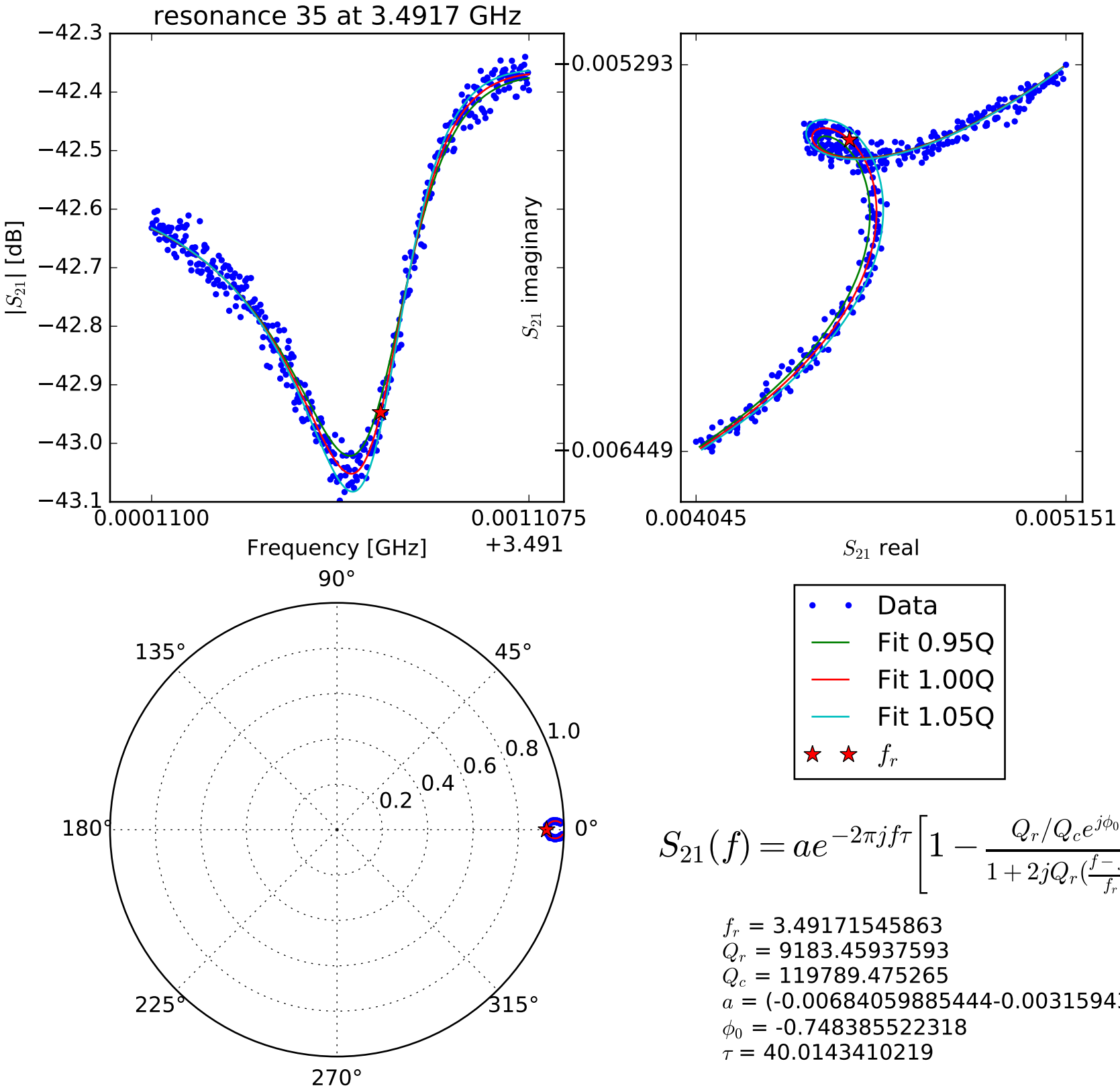






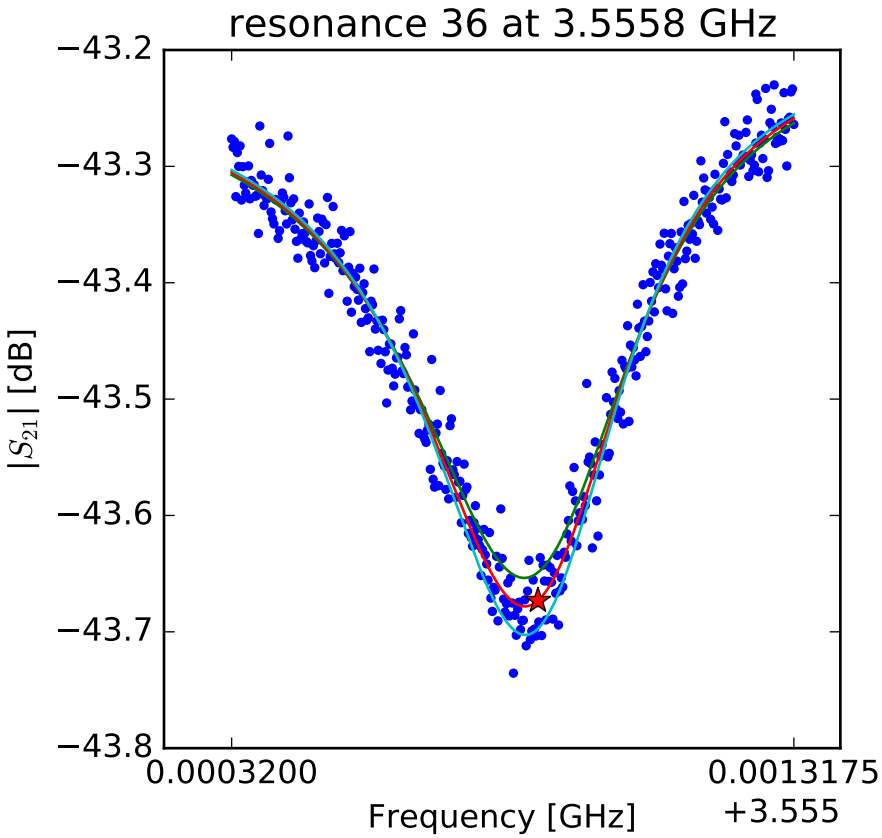
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

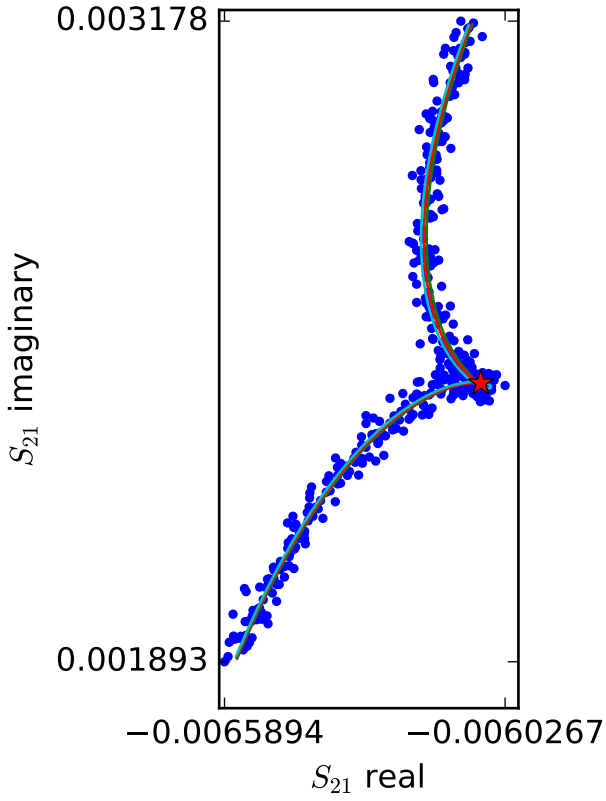
f_r = 3.48523388278
Q_r = 23237.7436102
Q_c = 121621.744394
a = (-0.00721327942159-0.00116228986116j)
ϕ_0 = -0.0295546629449
τ = 39.7154419936

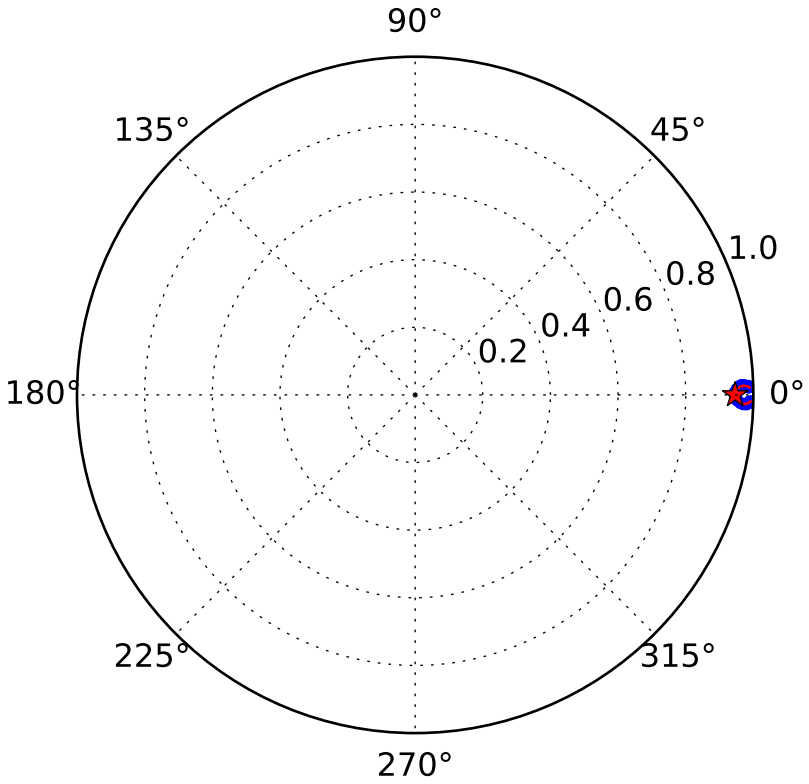


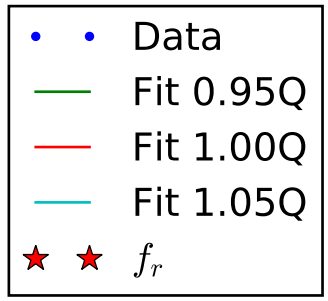
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.49171545863
Q_r = 9183.45937593
Q_c = 119789.475265
a = (-0.00684059885444-0.00315943740561j)
ϕ_0 = -0.748385522318
τ = 40.0143410219



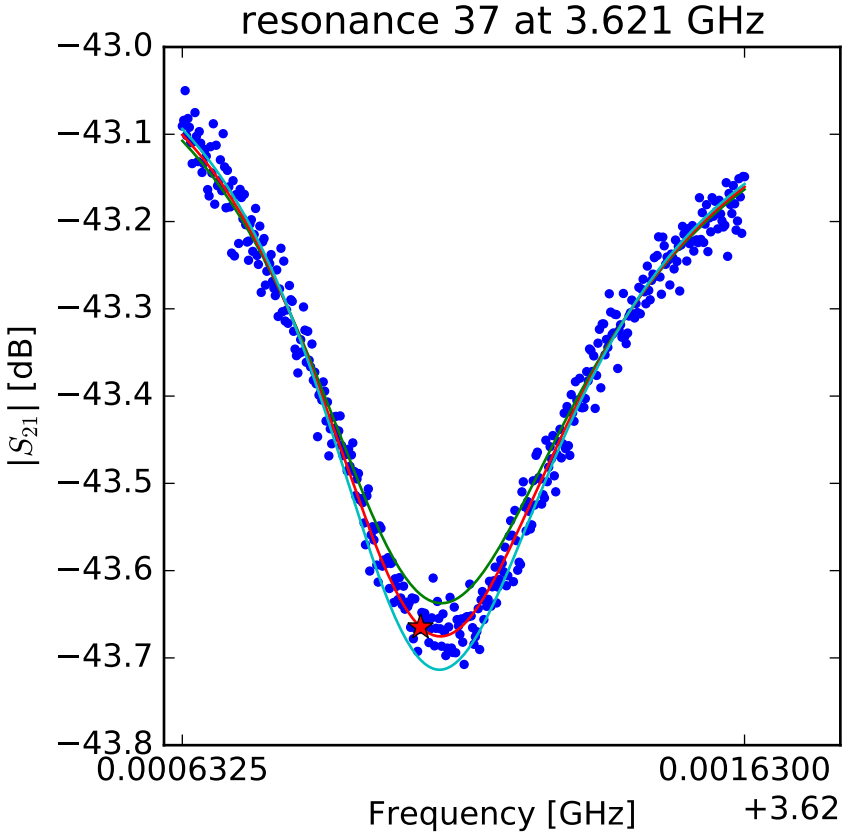


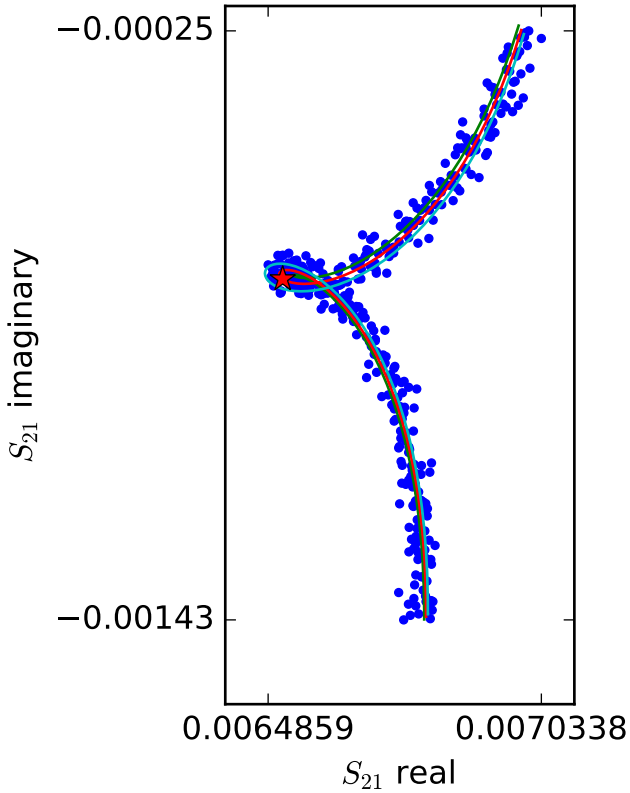


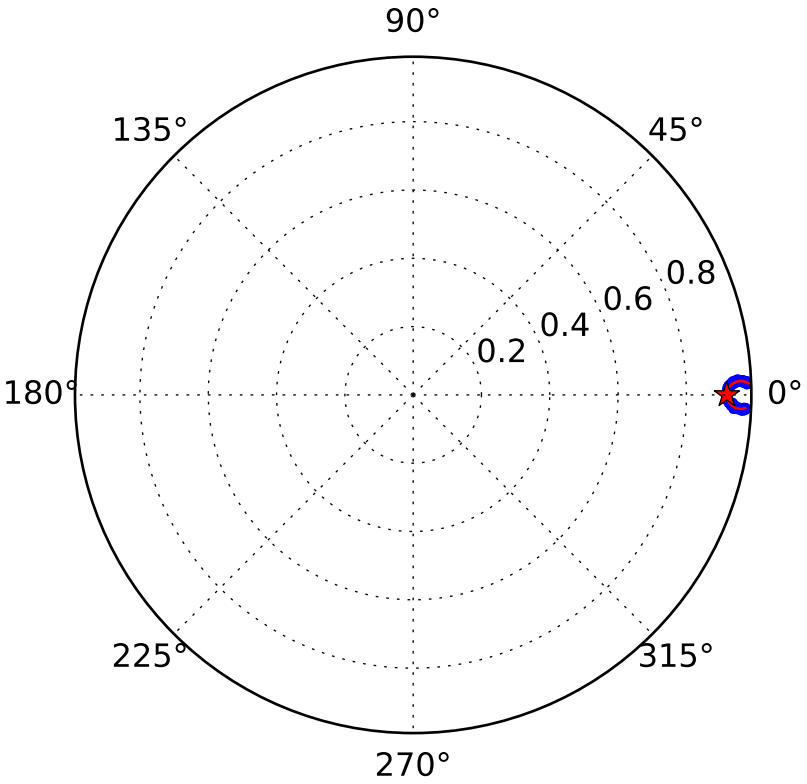


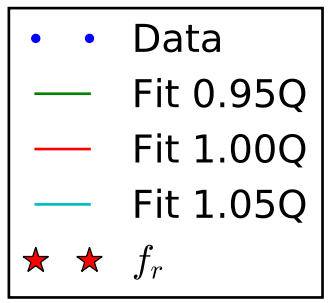
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.55586341271
Q_r = 7601.43083854
Q_c = 140986.279601
a = (0.0063464063848+0.00275132457387j)
ϕ_0 = -0.192998618457
τ = 38.1420412178



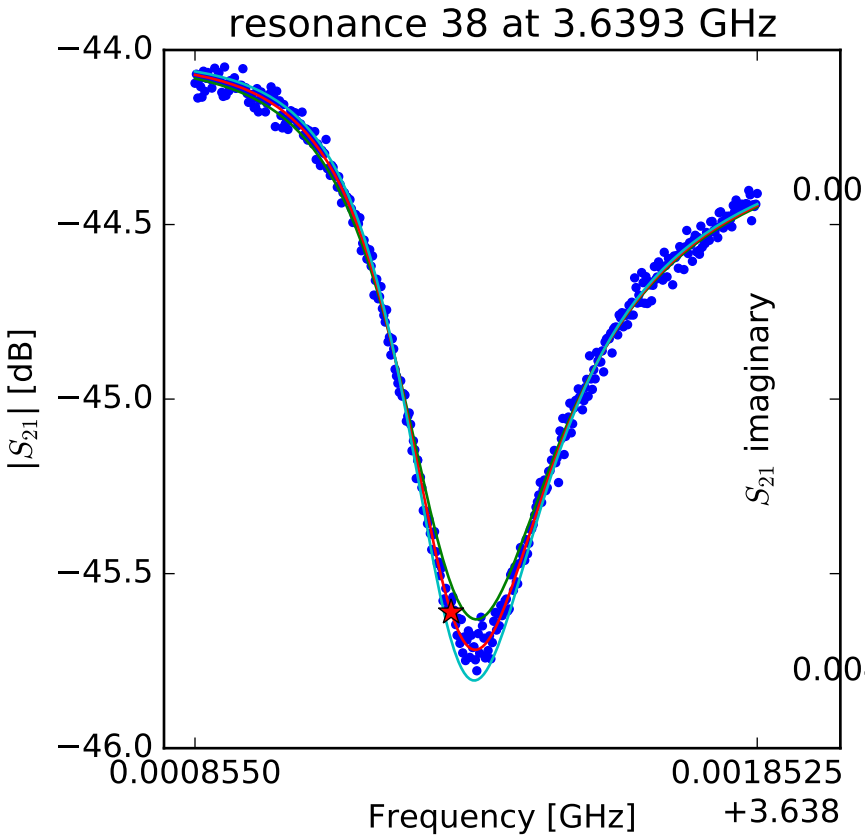


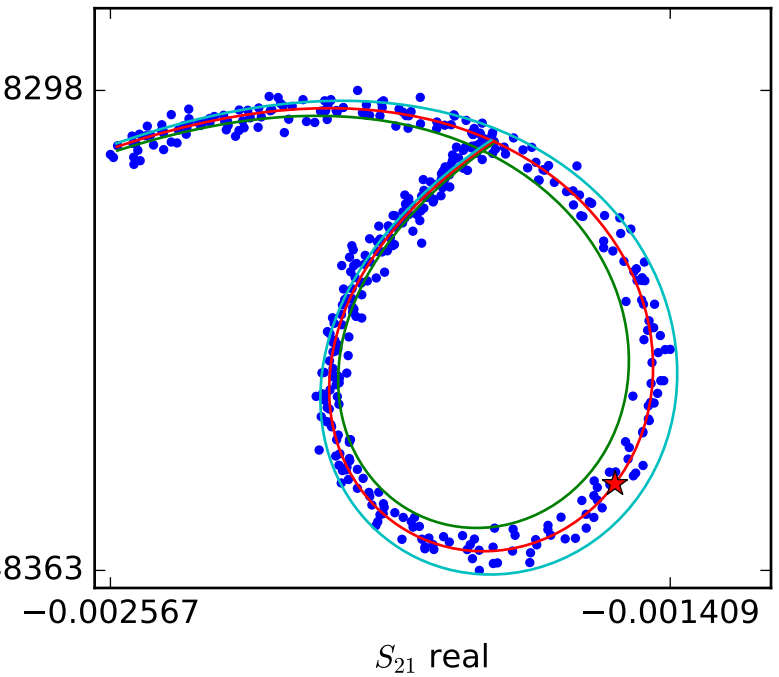


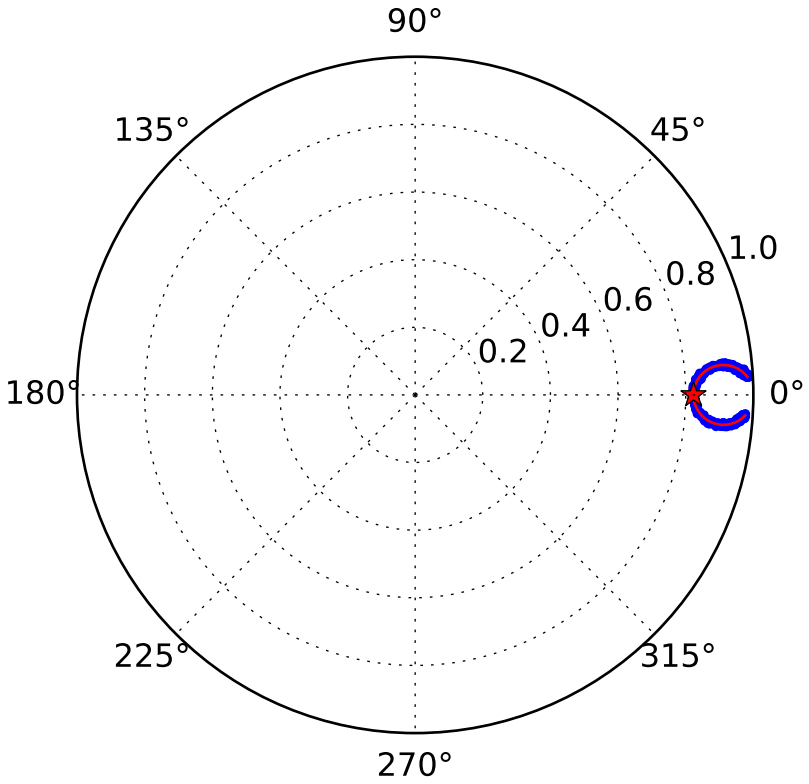


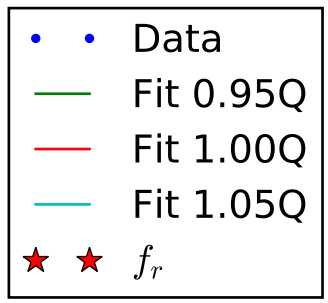
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.62105513544
Q_r = 5934.09208436
Q_c = 72592.5831173
a = (0.00429028716672-0.00568832937984j)
ϕ_0 = 0.221223860753
τ = 39.1786140122









$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.63930936079
Q_r = 10058.0876959
Q_c = 56803.964358
a = (-0.00621559588048+0.000351832868474
ϕ_0 = 0.426324595776
τ = 36.3201401887