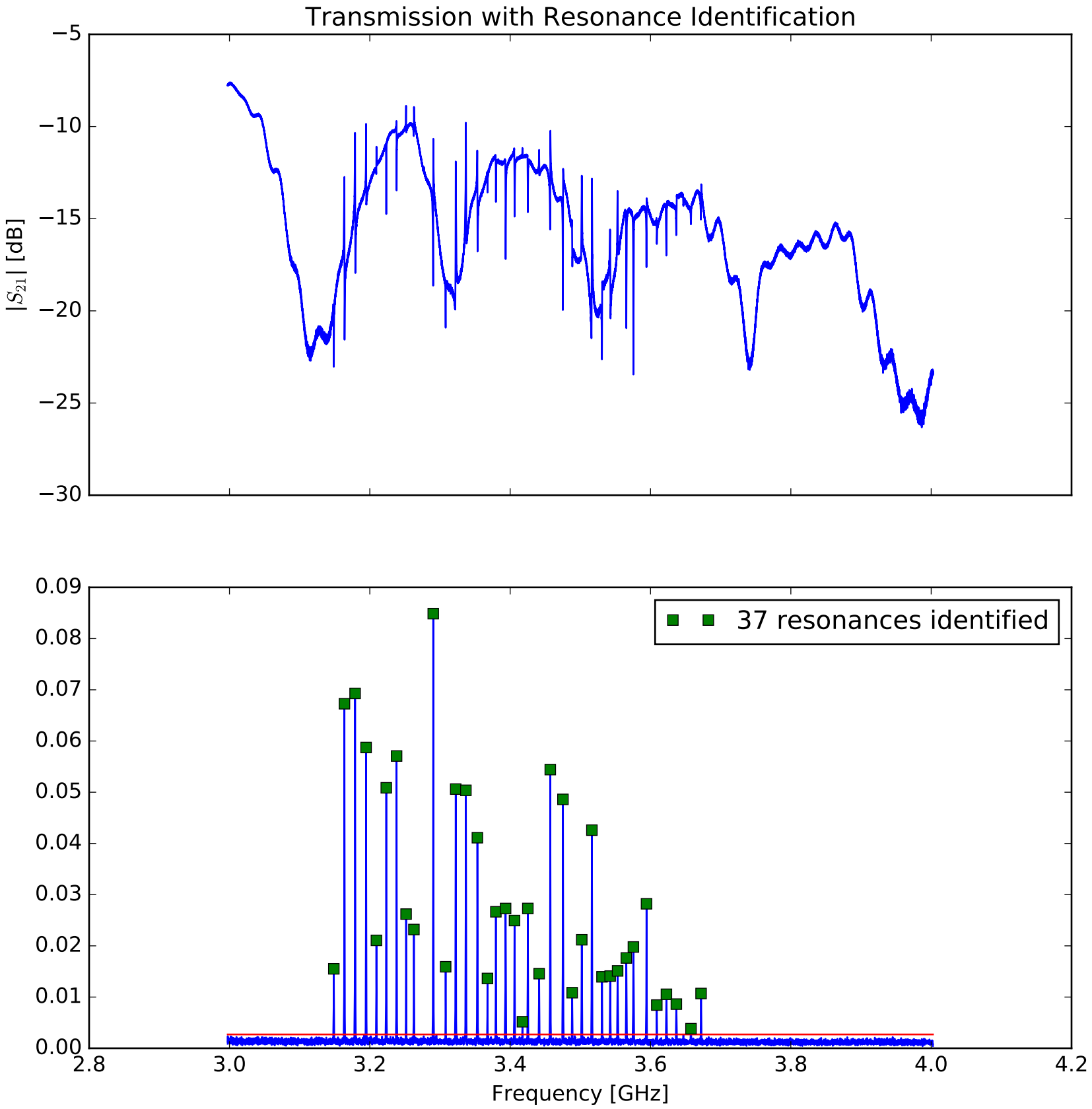
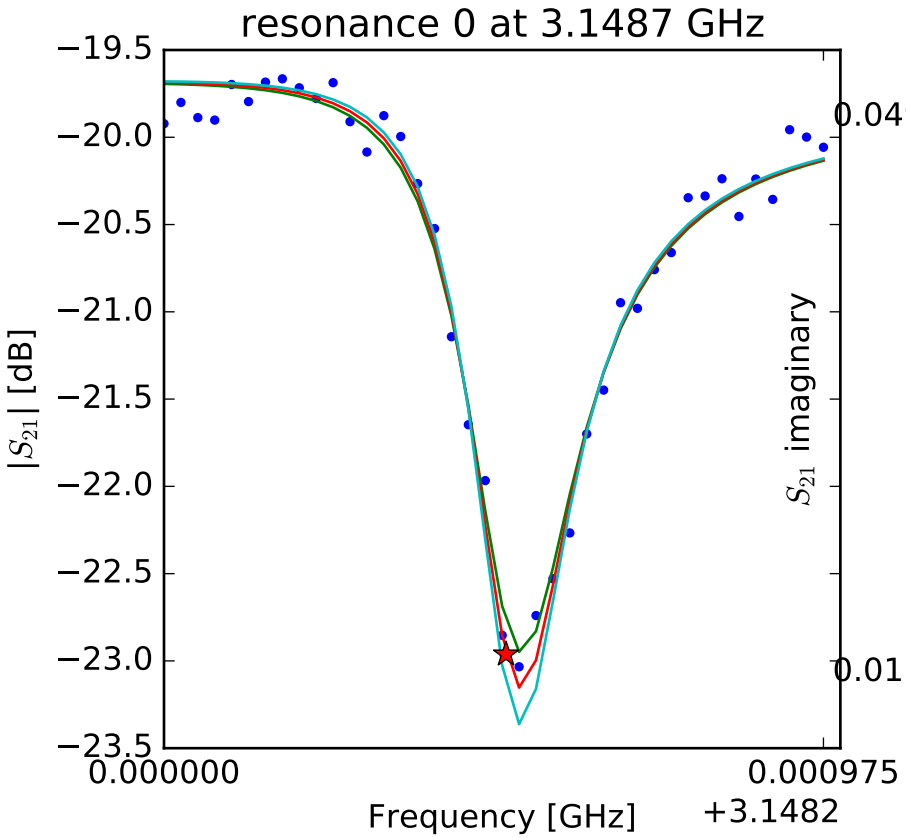
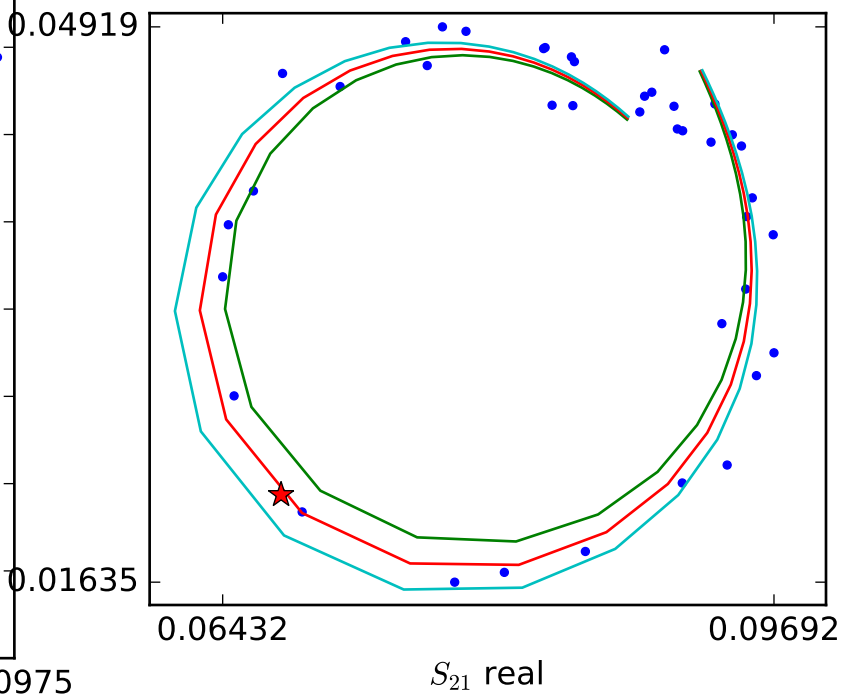
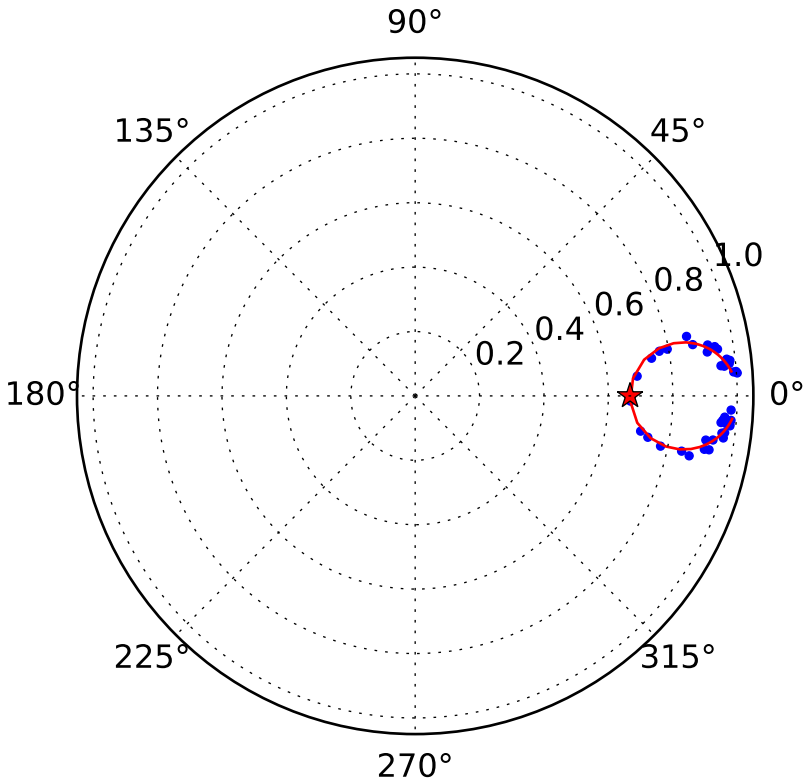
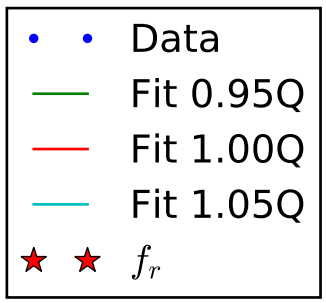

Transmission with Resonance Identification
$|S_{21}|$ [dB]
−5
−10
−15
−20
−25
−30
37 resonances identified
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
2.8
3.0
3.2
3.4
3.6
3.8
4.0
4.2
Frequency [GHz]



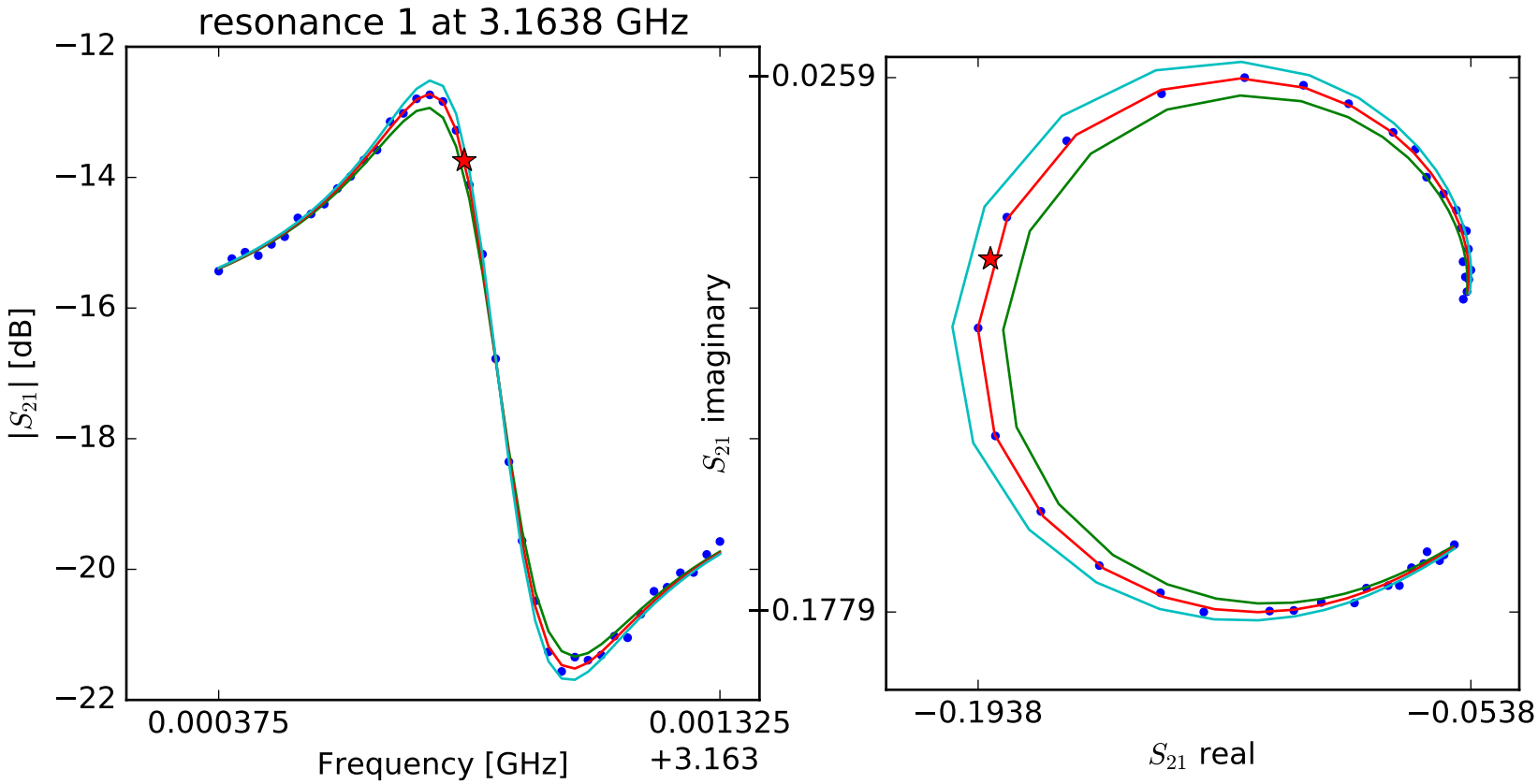


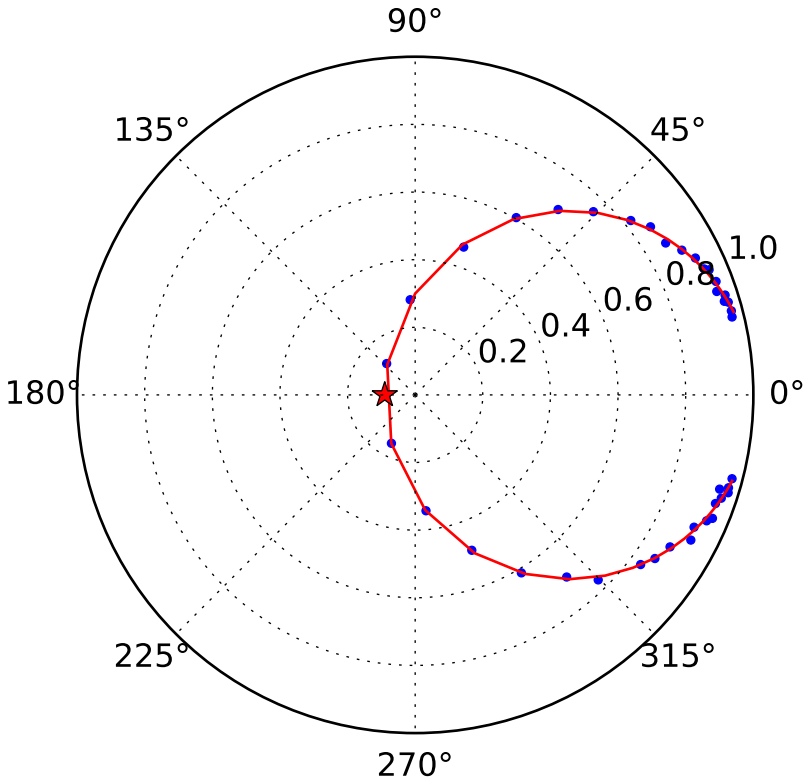


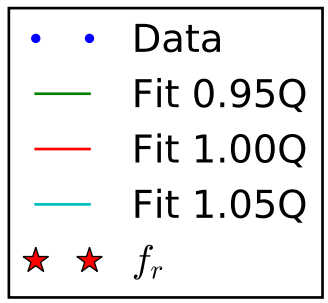


$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.14870567372
Q_r = 13816.3432732
Q_c = 41500.8052355
a = (-0.102572738236-0.00303324275513j)
ϕ_0 = 0.326387695337
τ = 23.9562446559

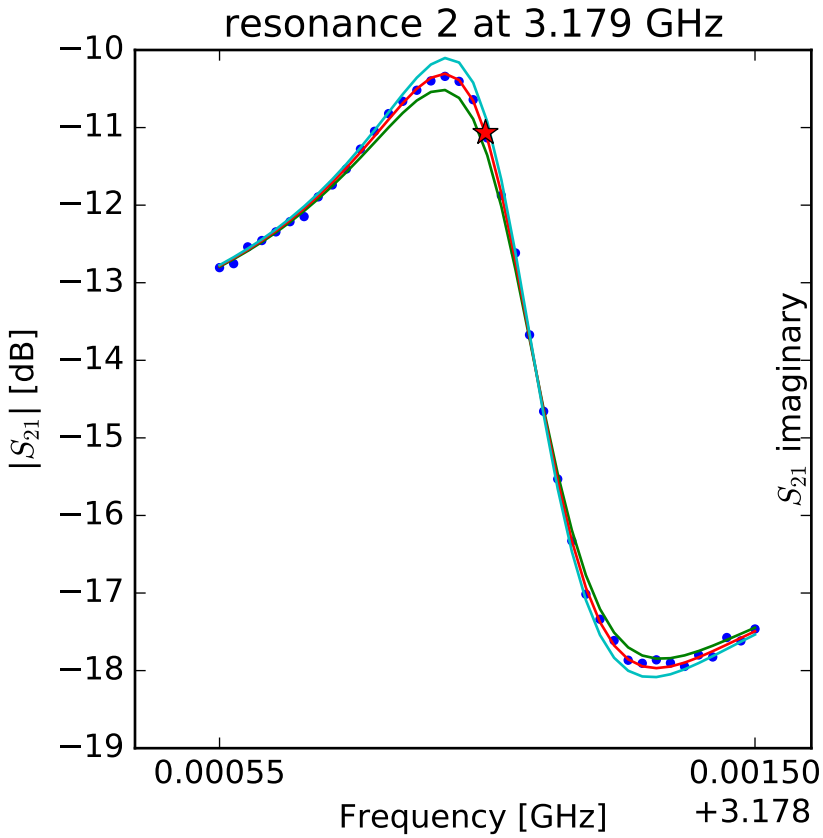


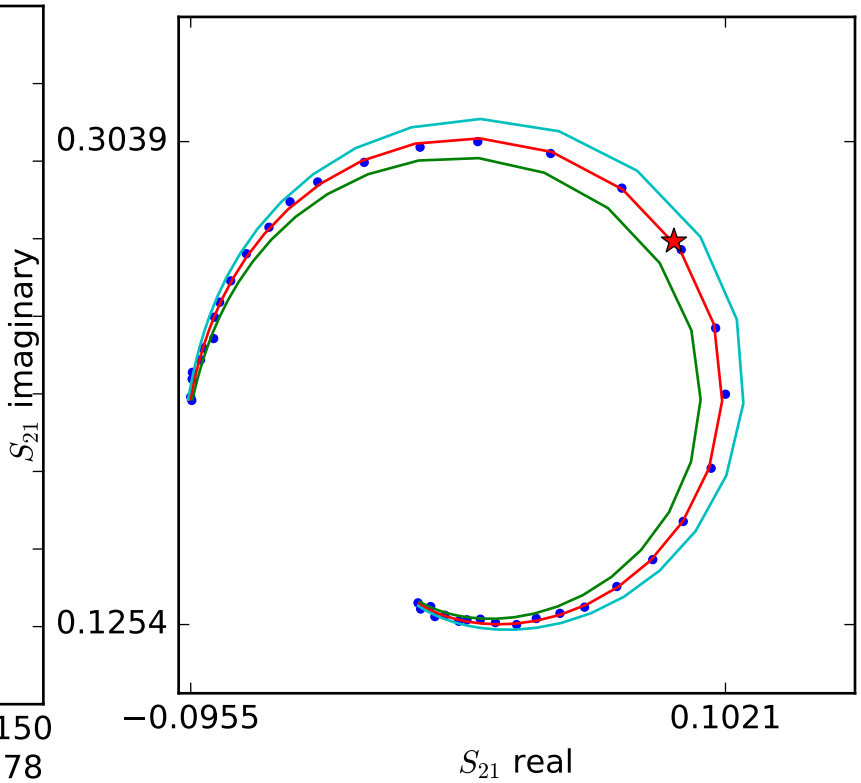


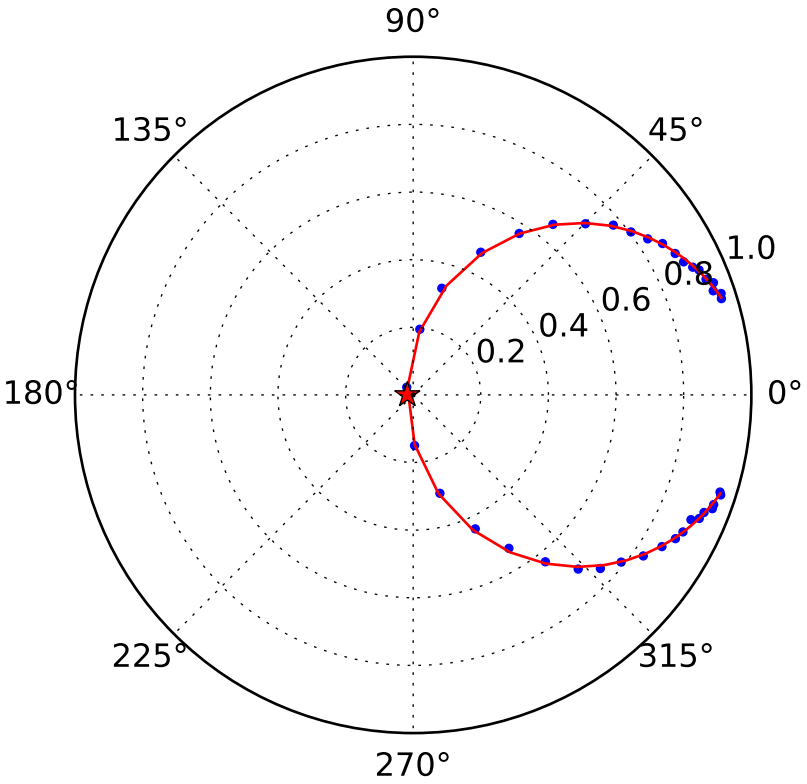


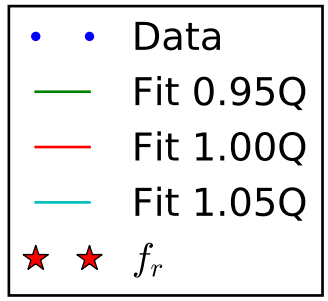
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.16384046862
Q_r = 13724.5107187
Q_c = 12591.7110597
a = (0.0837460227099-0.10602216636j)
ϕ_0 = 1.6284708926
τ = 25.0227607546



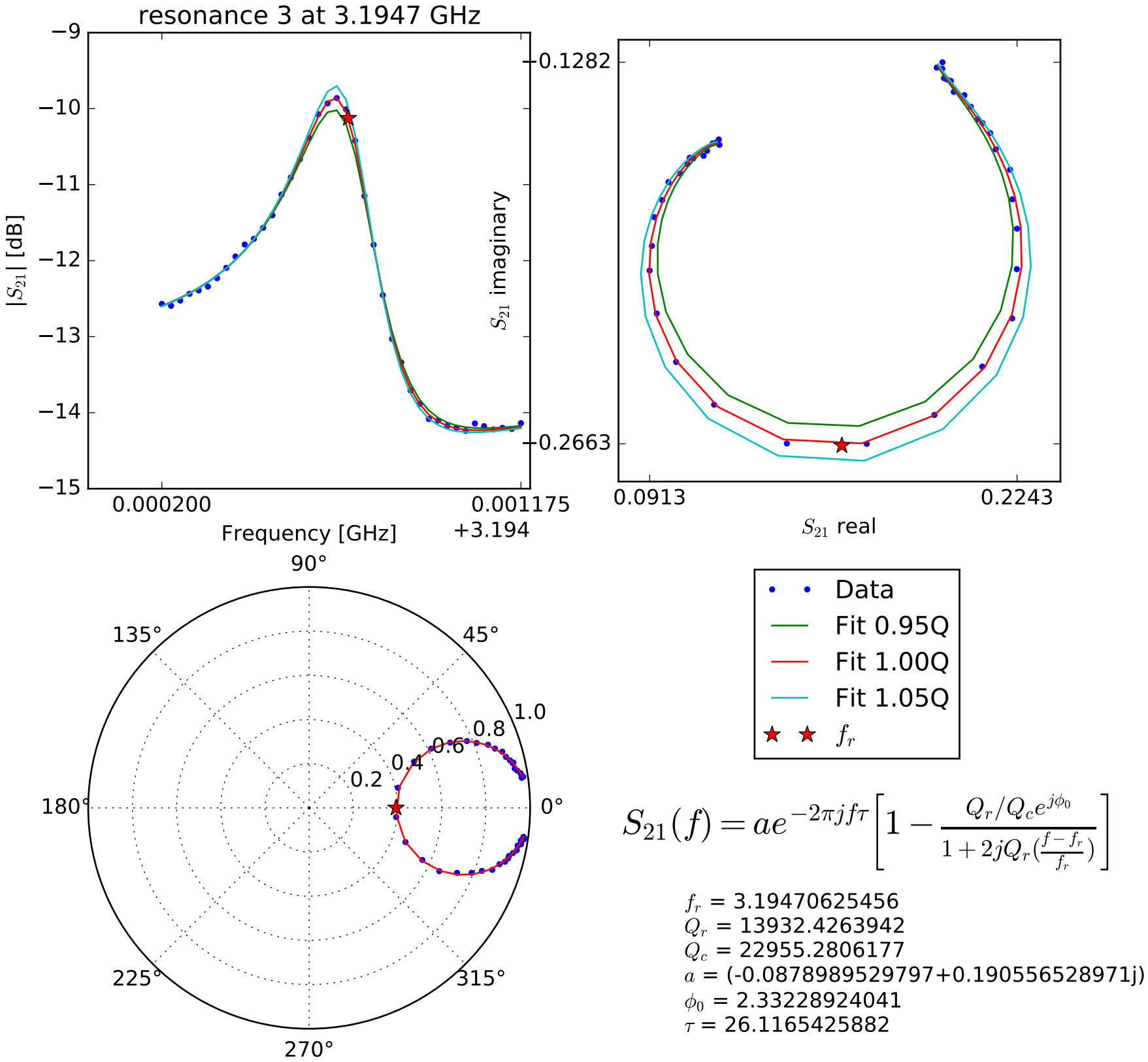






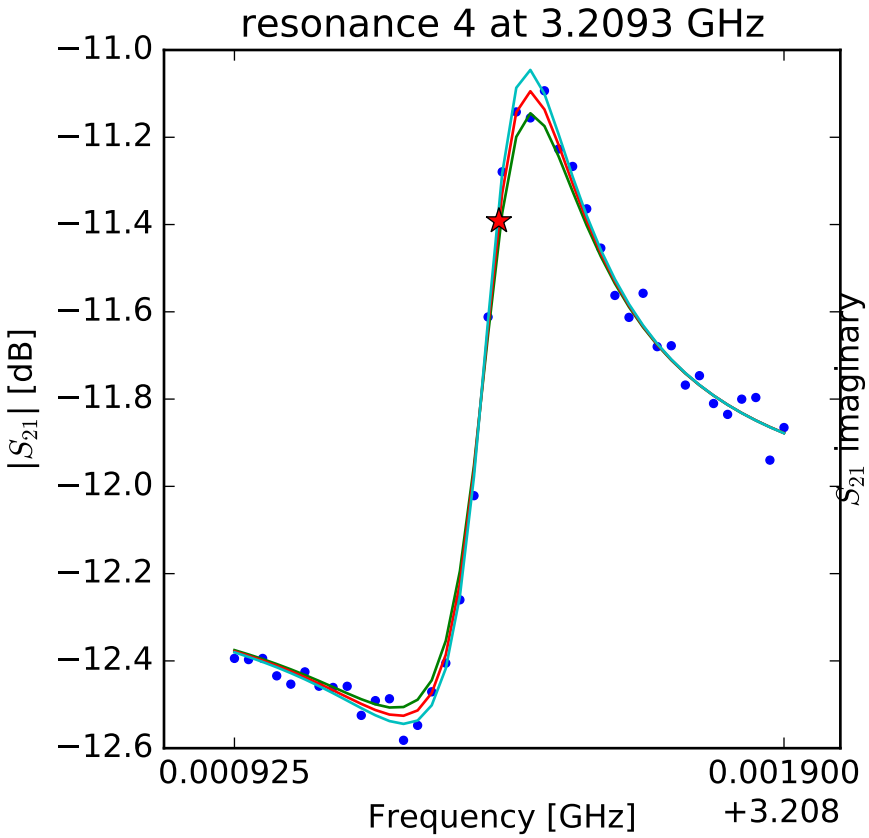
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

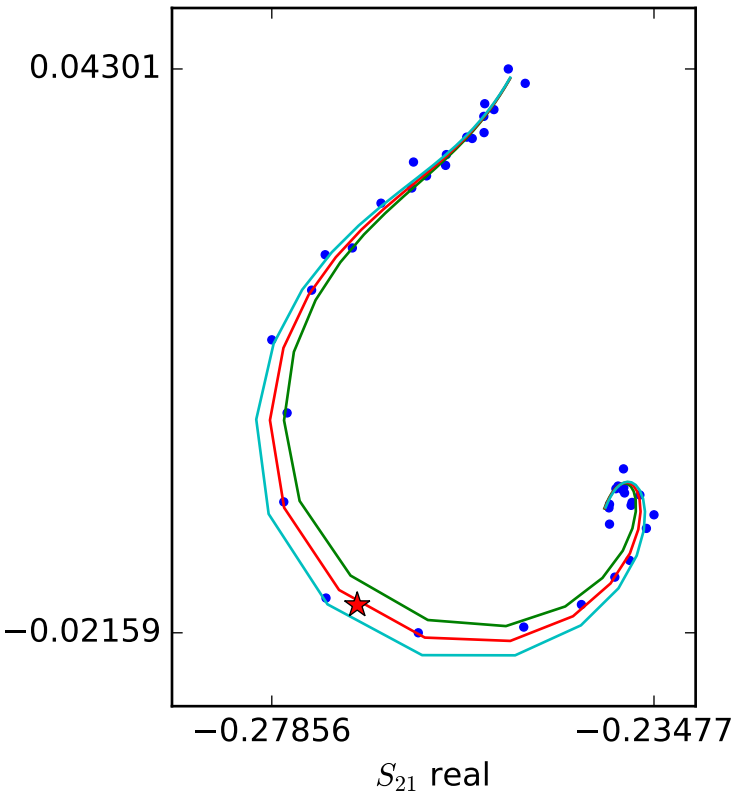
f_r = 3.17902183439
Q_r = 10713.8394985
Q_c = 10531.9756661
a = (0.114037047211-0.133961686278j)
ϕ_0 = 1.81547910715
τ = 25.6536917137

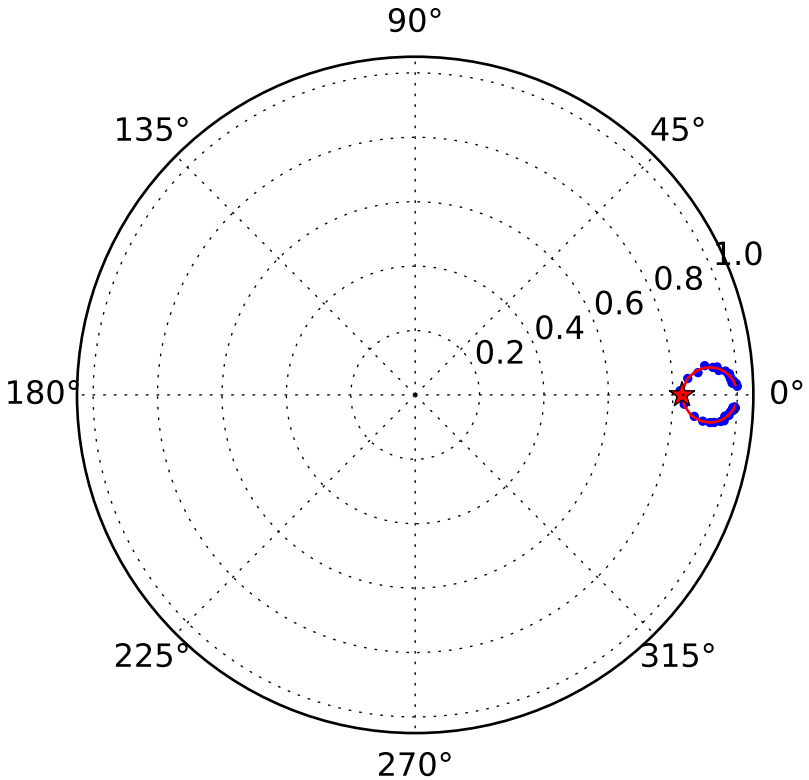


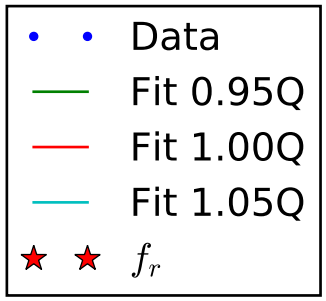
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.19470625456
Q_r = 13932.4263942
Q_c = 22955.2806177
a = (-0.0878989529797+0.190556528971j)
ϕ_0 = 2.33228924041
τ = 26.1165425882



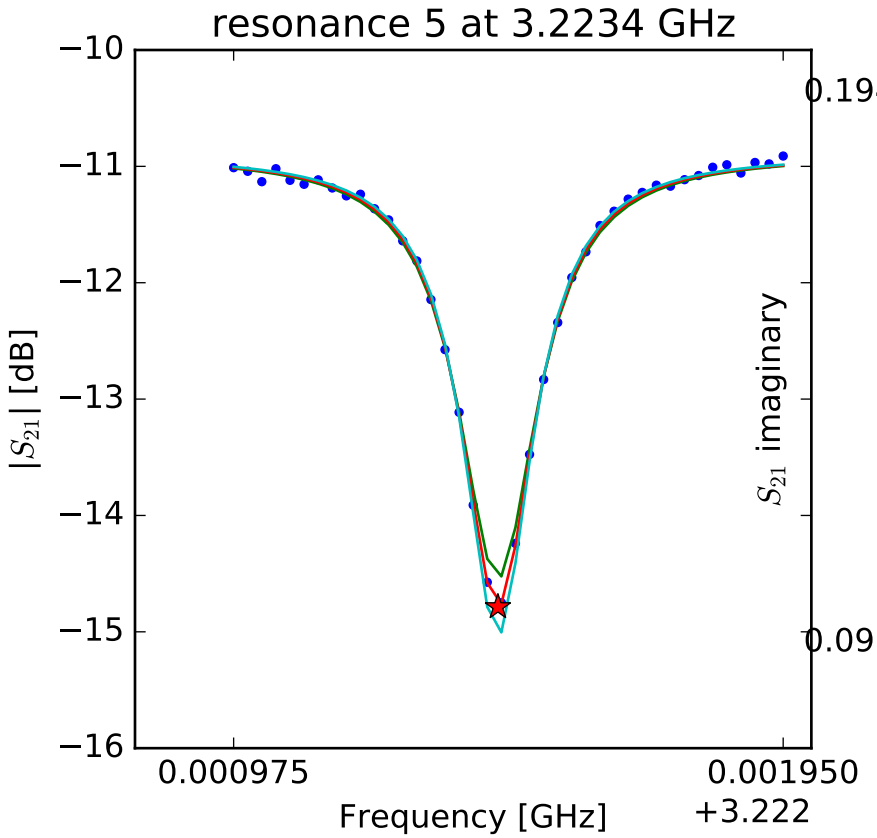


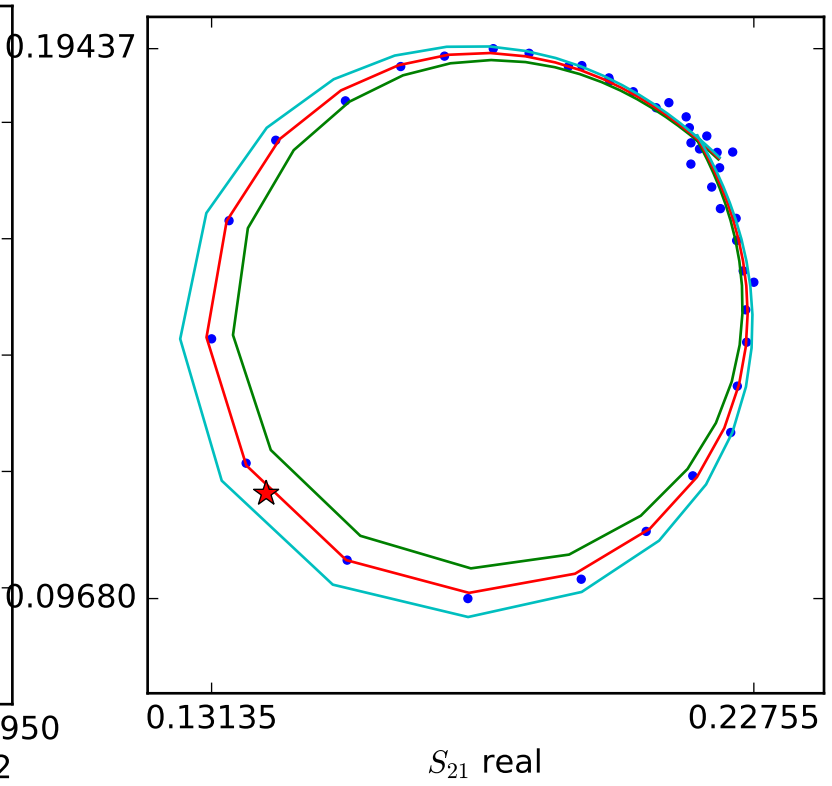


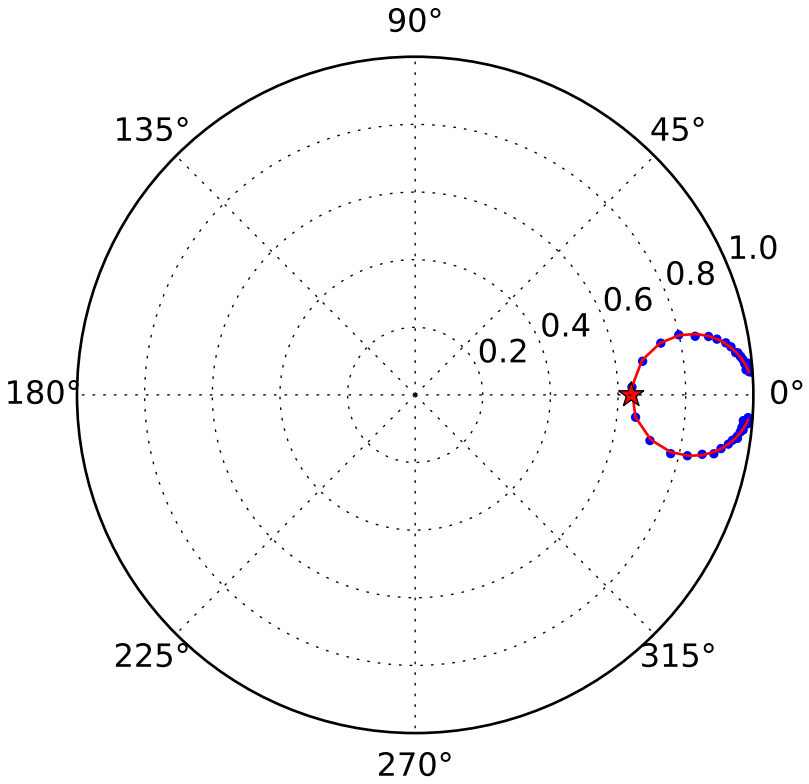


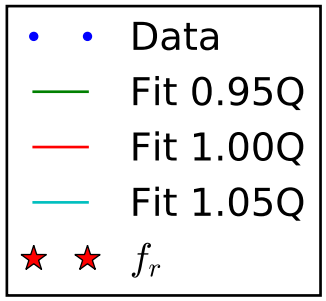
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.2093941896
Q_r = 16500.3617536
Q_c = 96218.3481936
a = (-0.152941647959+0.19404684057j)
ϕ_0 = -2.0546377597
τ = 26.755074565



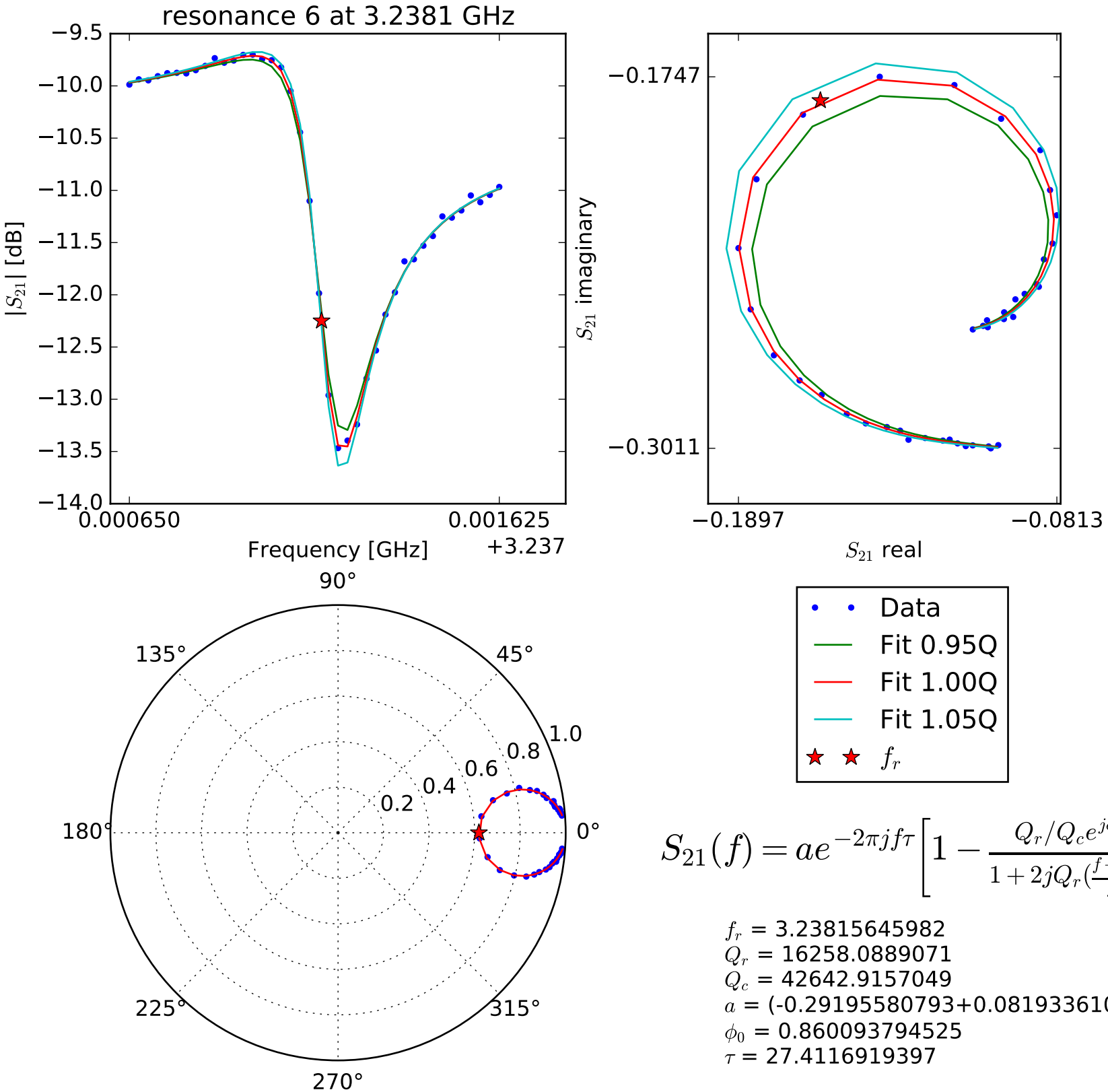






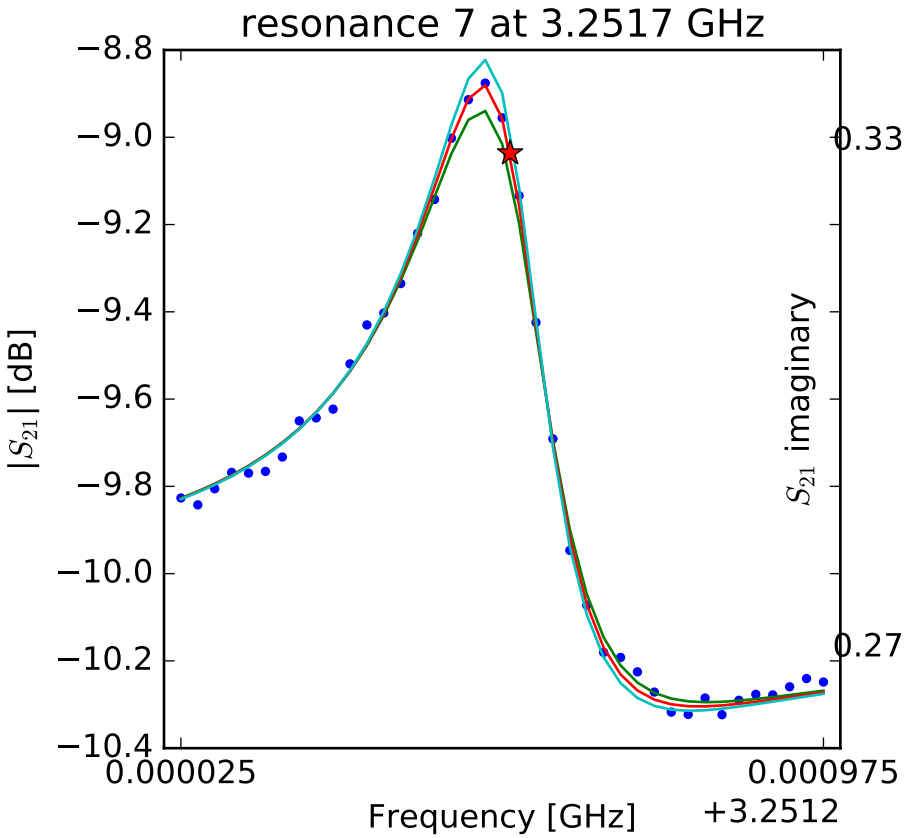
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

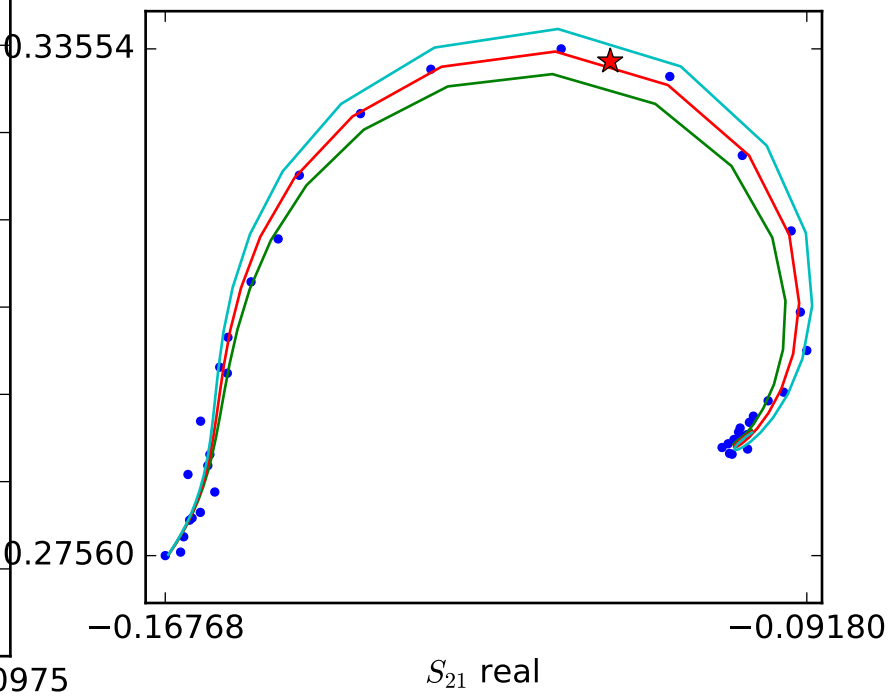
f_r = 3.22344387019
Q_r = 16083.3784611
Q_c = 44540.5579169
a = (-0.132784695252-0.252487913669j)
ϕ_0 = -0.00281089692741
τ = 26.8545146646

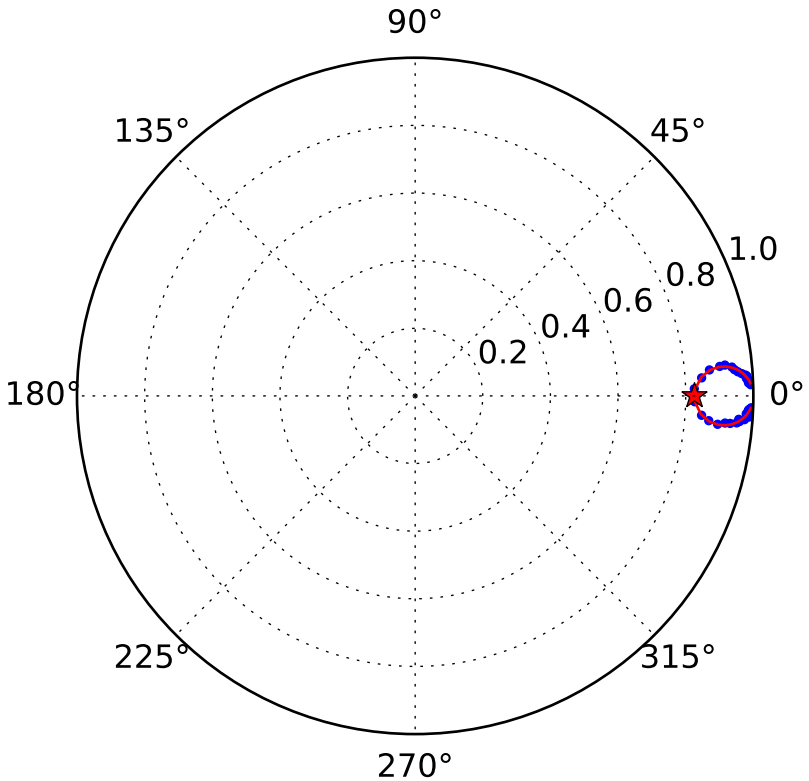


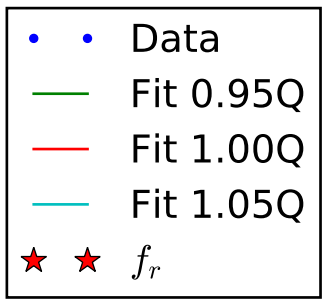
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.23815645982
Q_r = 16258.0889071
Q_c = 42642.9157049
a = (-0.29195580793+0.0819336103024j)
ϕ_0 = 0.860093794525
τ = 27.4116919397



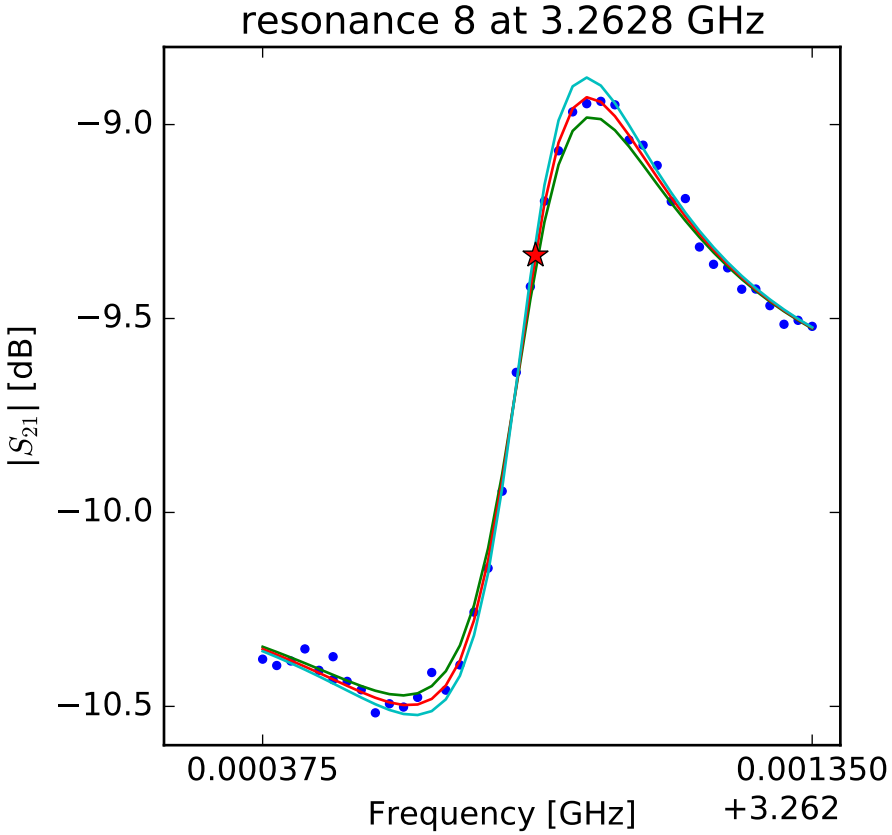


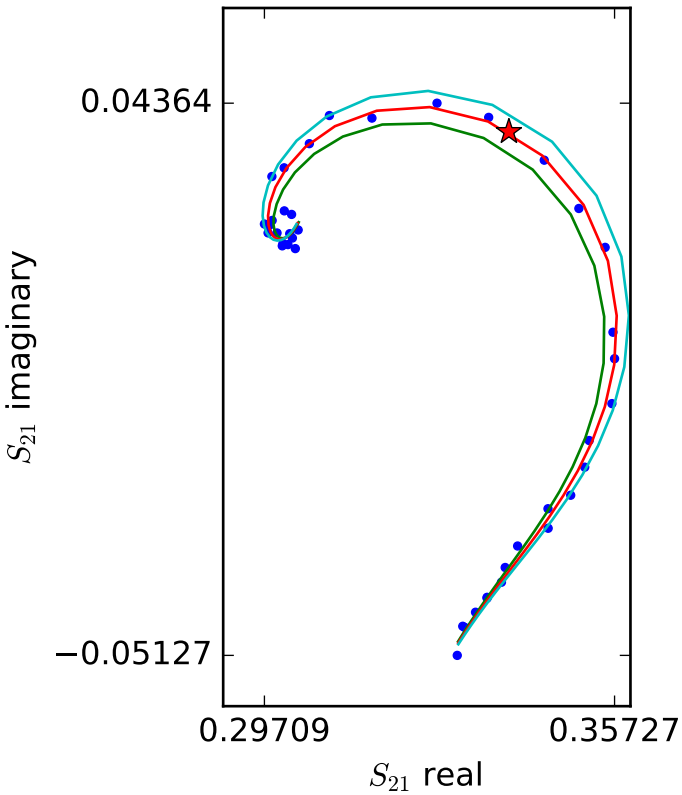


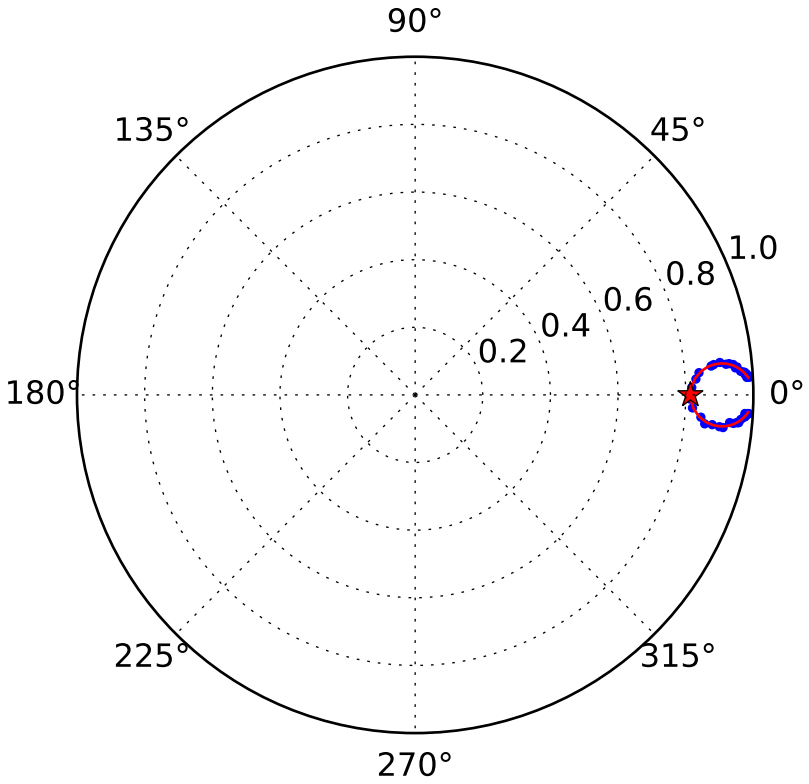


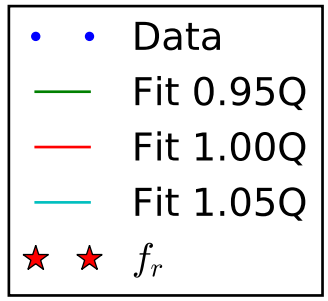
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.2517116916
Q_r = 15358.1251245
Q_c = 88247.6885096
a = (-0.230089342606-0.211835049698j)
ϕ_0 = 2.35592583381
τ = 27.7694581416



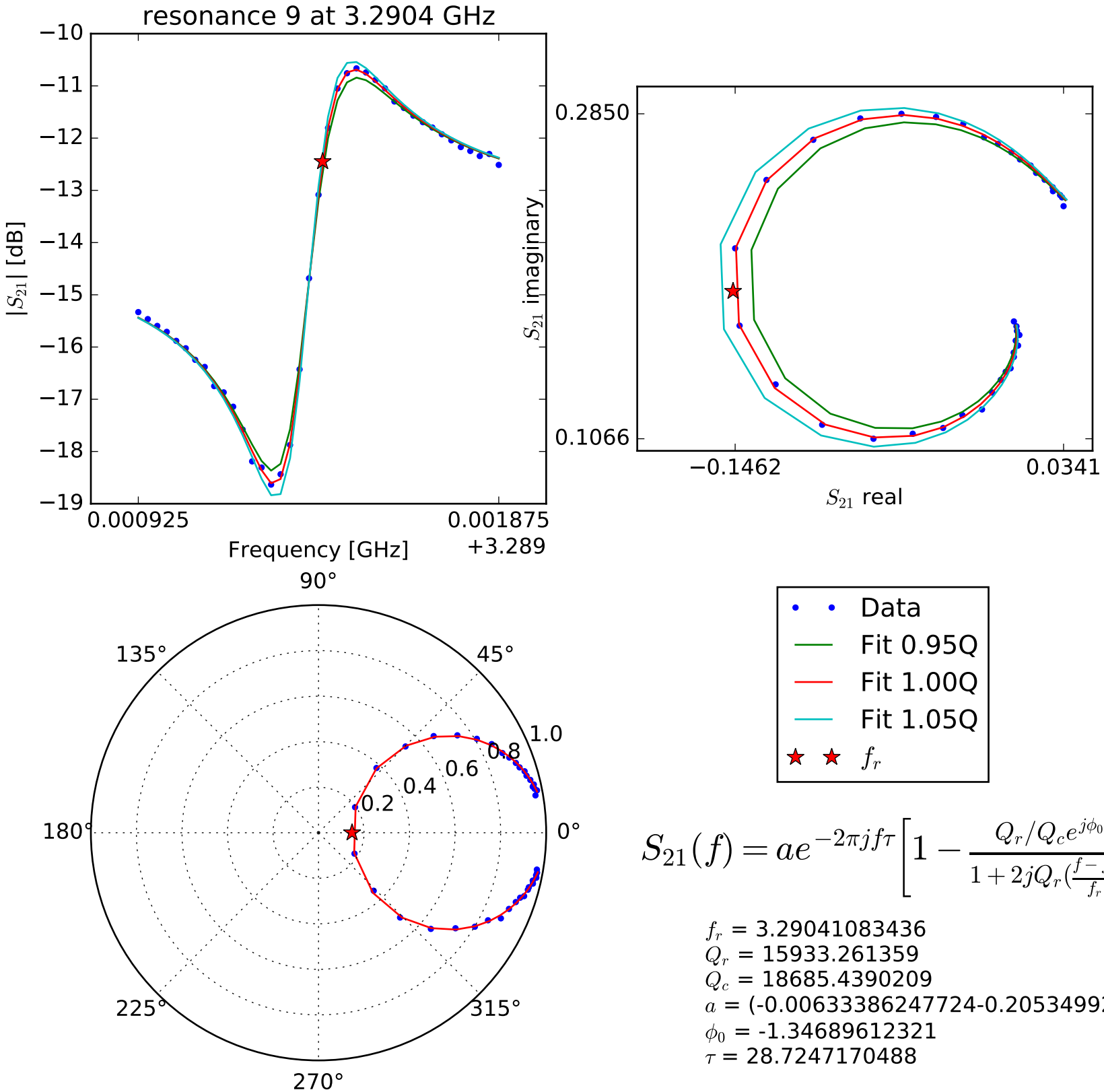






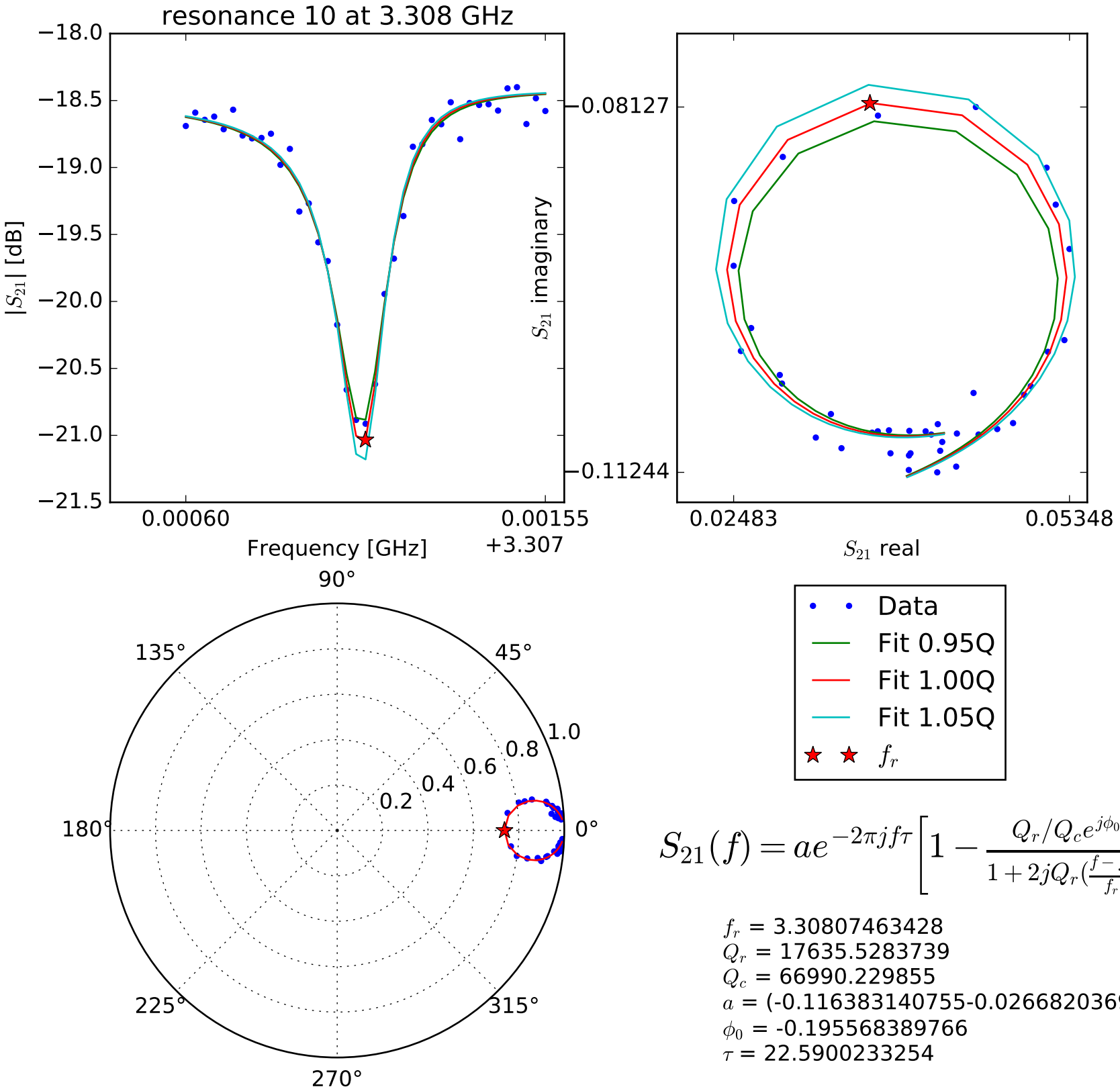
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.26285915088
Q_r = 11211.9514702
Q_c = 60200.3340549
a = (0.0428326584174+0.314353301814j)
ϕ_0 = -1.90651110645
τ = 30.720443913



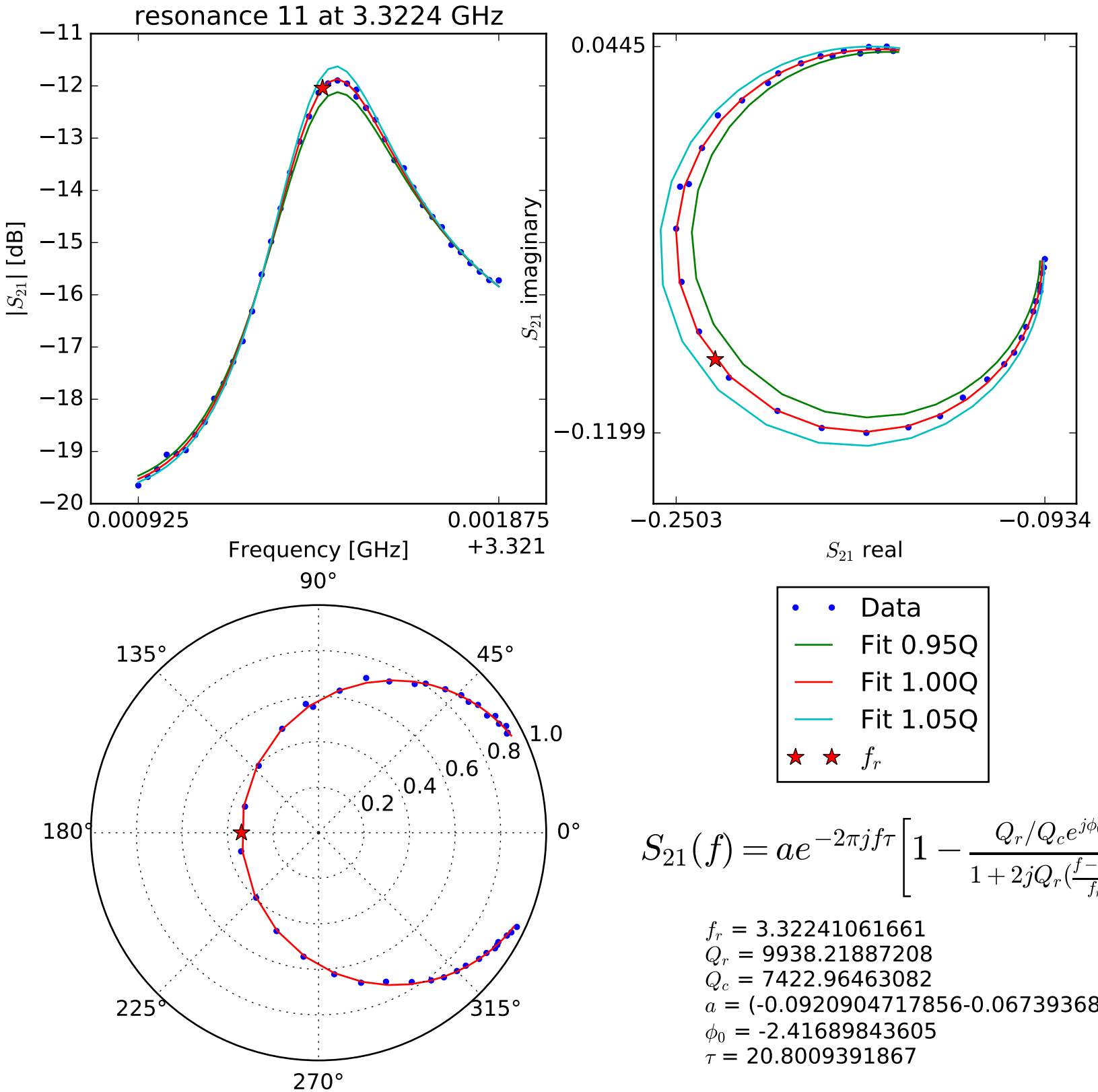
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.29041083436
Q_r = 15933.261359
Q_c = 18685.4390209
a = (-0.00633386247724-0.205349922534j)
ϕ_0 = -1.34689612321
τ = 28.7247170488



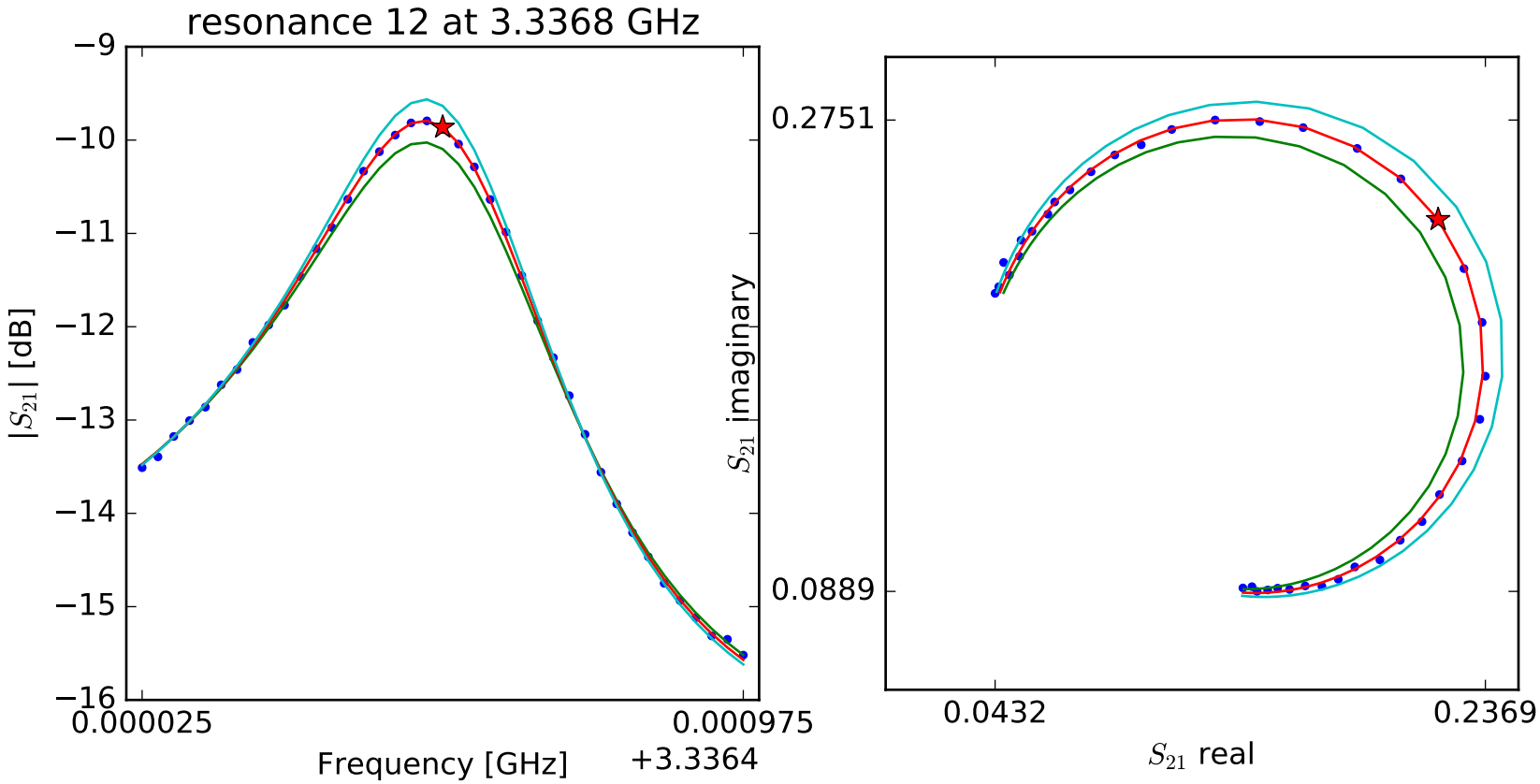
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

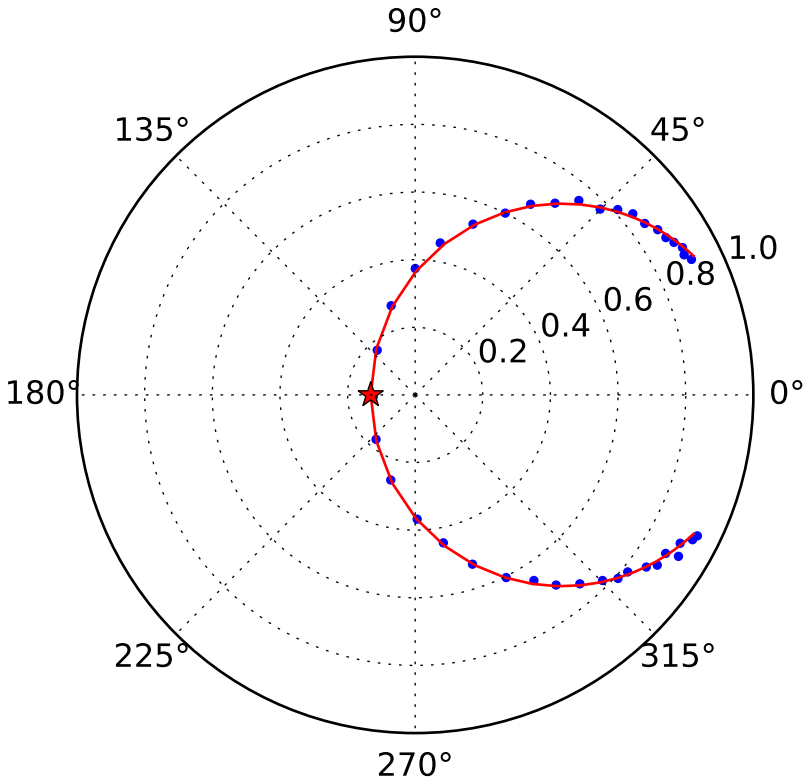
f_r = 3.30807463428
Q_r = 17635.5283739
Q_c = 66990.229855
a = (-0.116383140755-0.0266820369589j)
ϕ_0 = -0.195568389766
τ = 22.5900233254

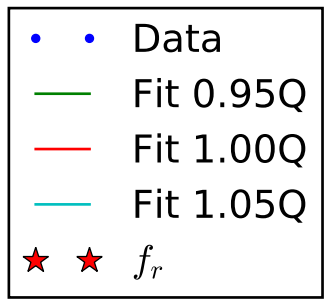


$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.32241061661
Q_r = 9938.21887208
Q_c = 7422.96463082
a = (-0.0920904717856-0.0673936846242j)
ϕ_0 = -2.41689843605
τ = 20.8009391867

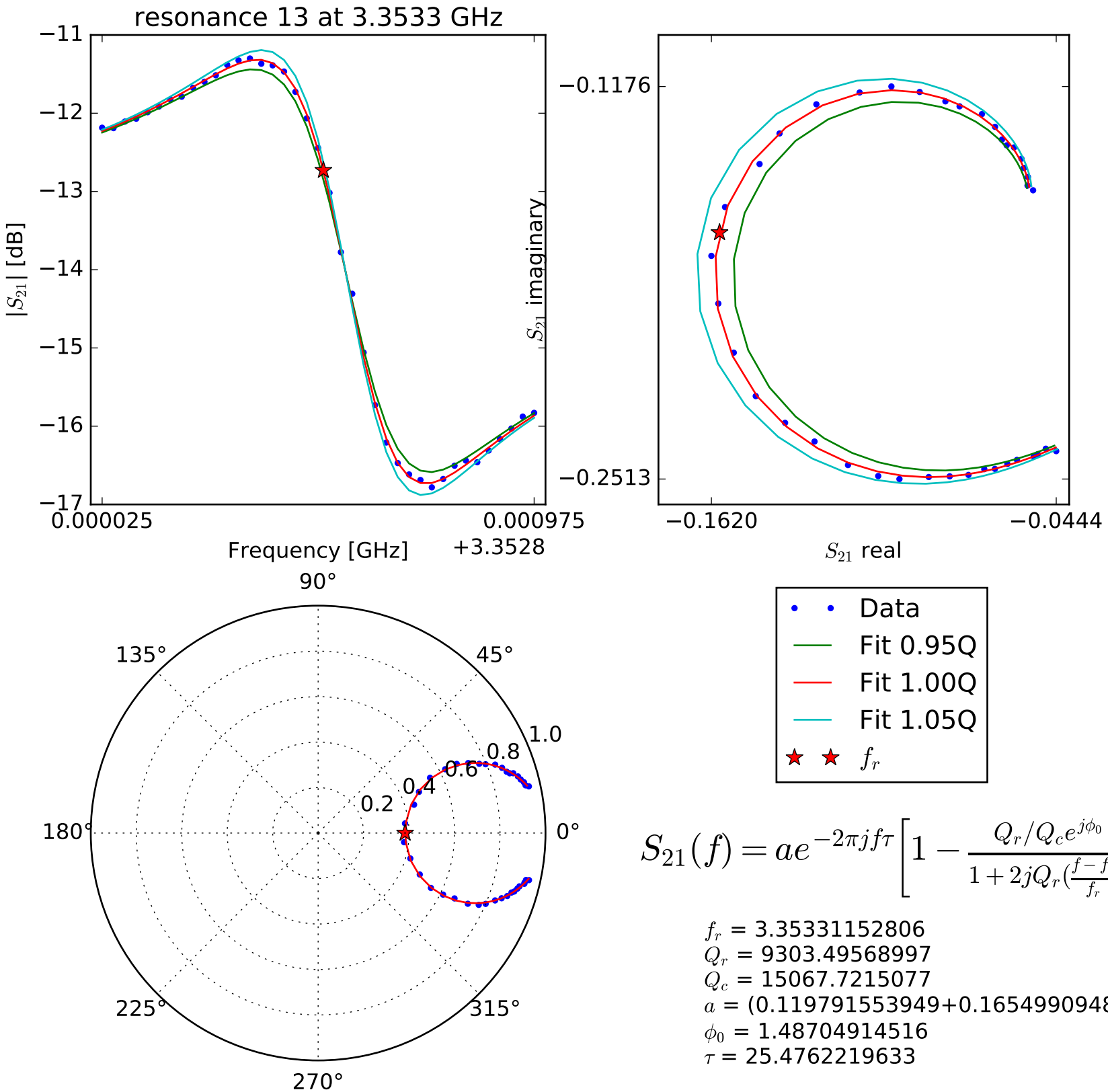






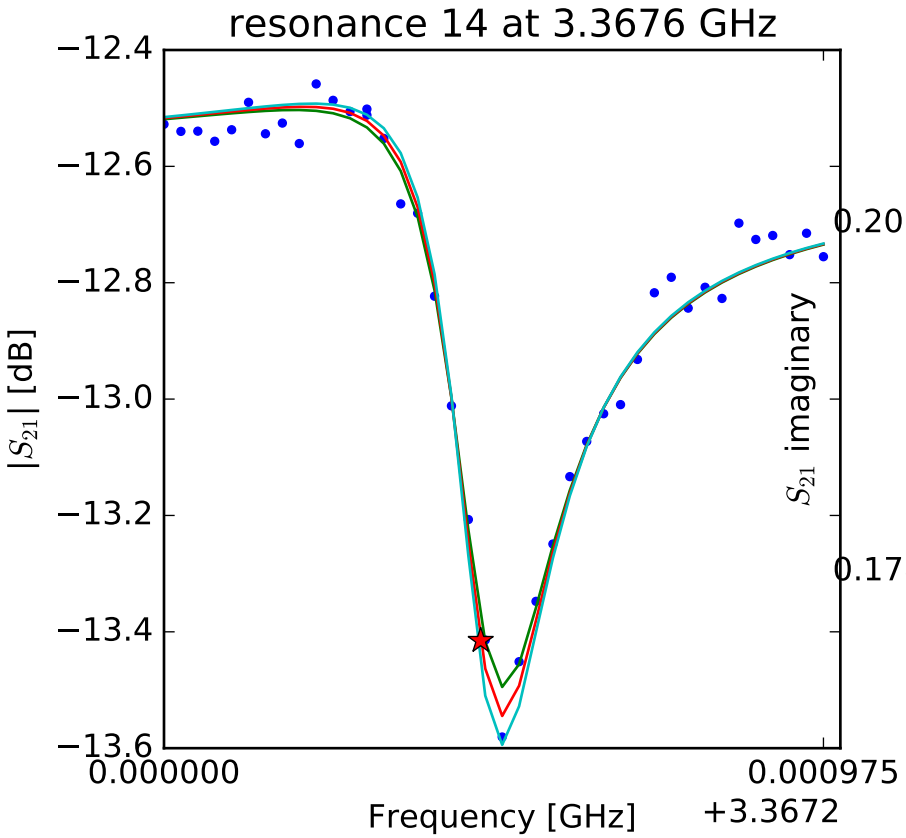
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

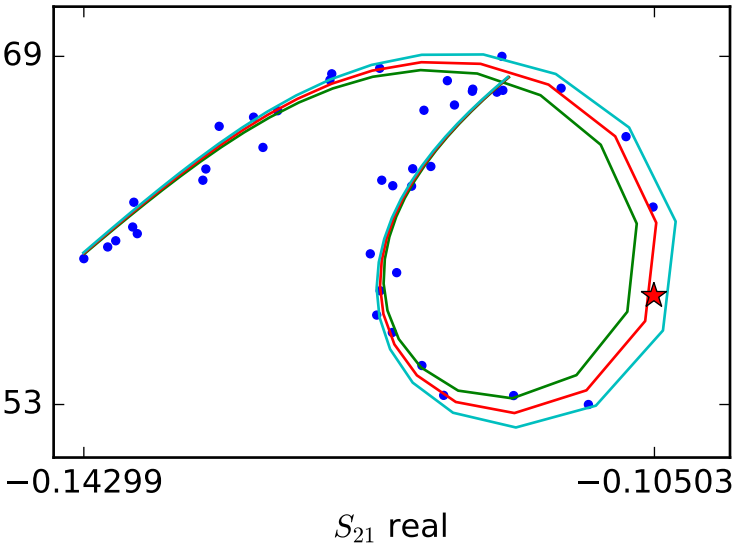
f_r = 3.33689997749
Q_r = 8158.19866171
Q_c = 7209.47846223
a = (0.154371879092+0.00933382686012j)
ϕ_0 = 2.68942726167
τ = 25.7245447036

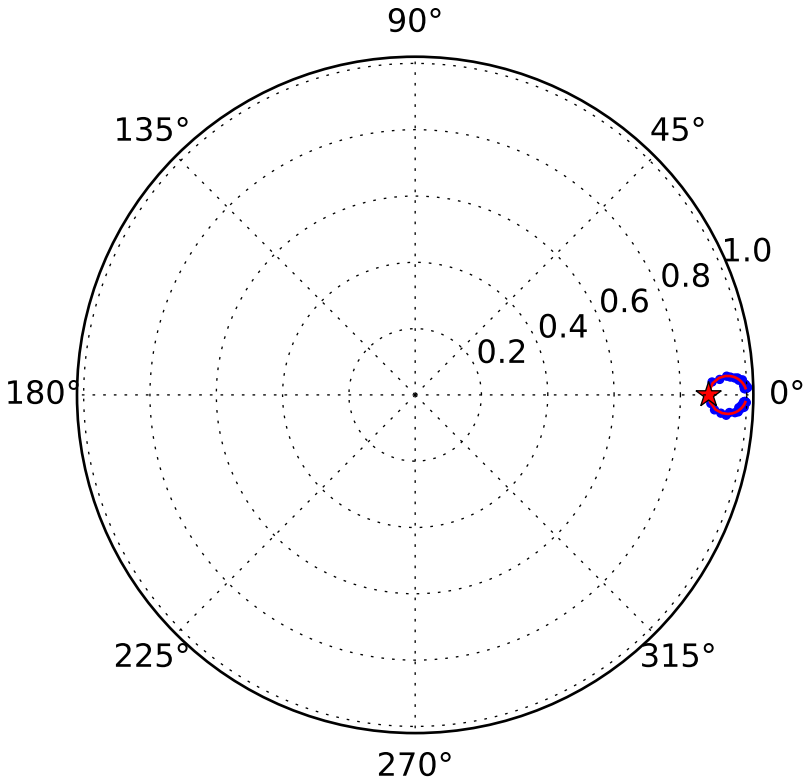


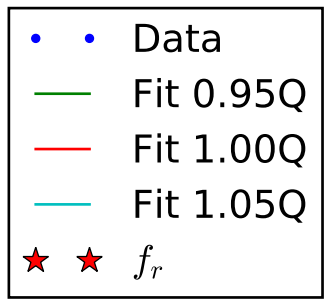
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.35331152806
Q_r = 9303.49568997
Q_c = 15067.7215077
a = (0.119791553949+0.165499094833j)
ϕ_0 = 1.48704914516
τ = 25.4762219633



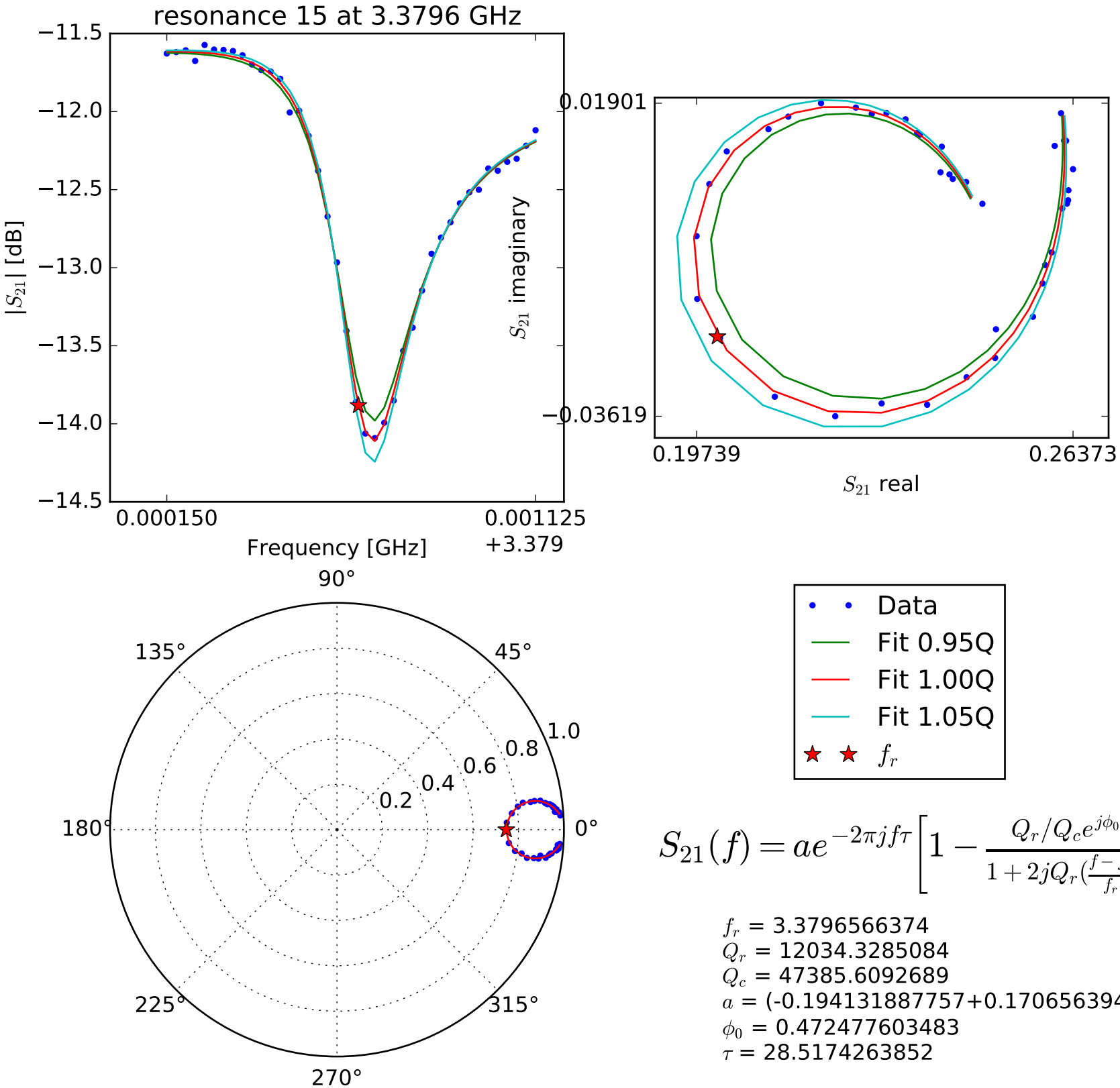






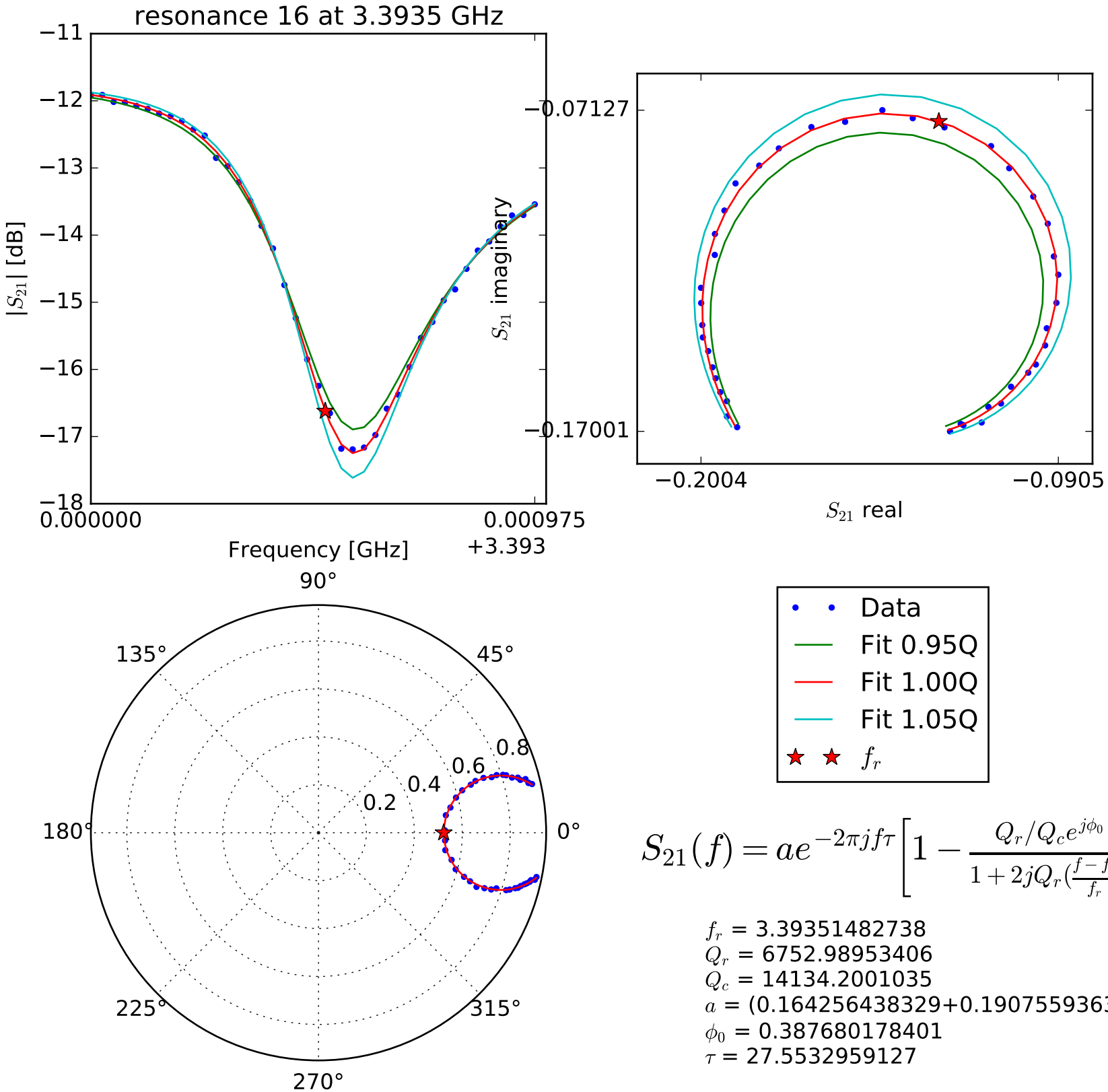
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.36766822755
Q_r = 18246.6341595
Q_c = 158739.213336
a = (-0.109316866-0.207307282826j)
ϕ_0 = 0.643417450619
τ = 26.5254116452



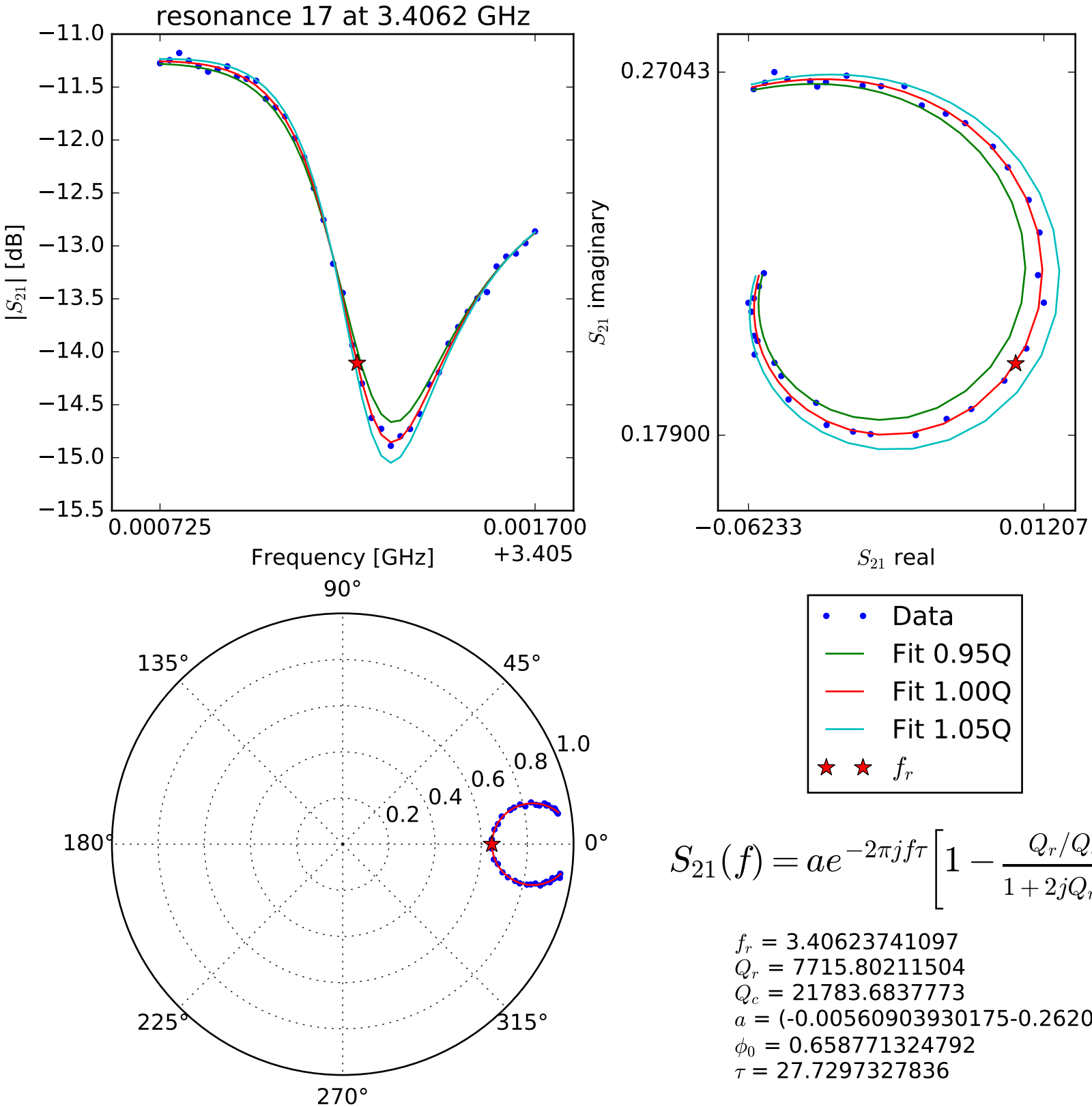
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.3796566374
Q_r = 12034.3285084
Q_c = 47385.6092689
a = (-0.194131887757+0.170656394525j)
ϕ_0 = 0.472477603483
τ = 28.5174263852



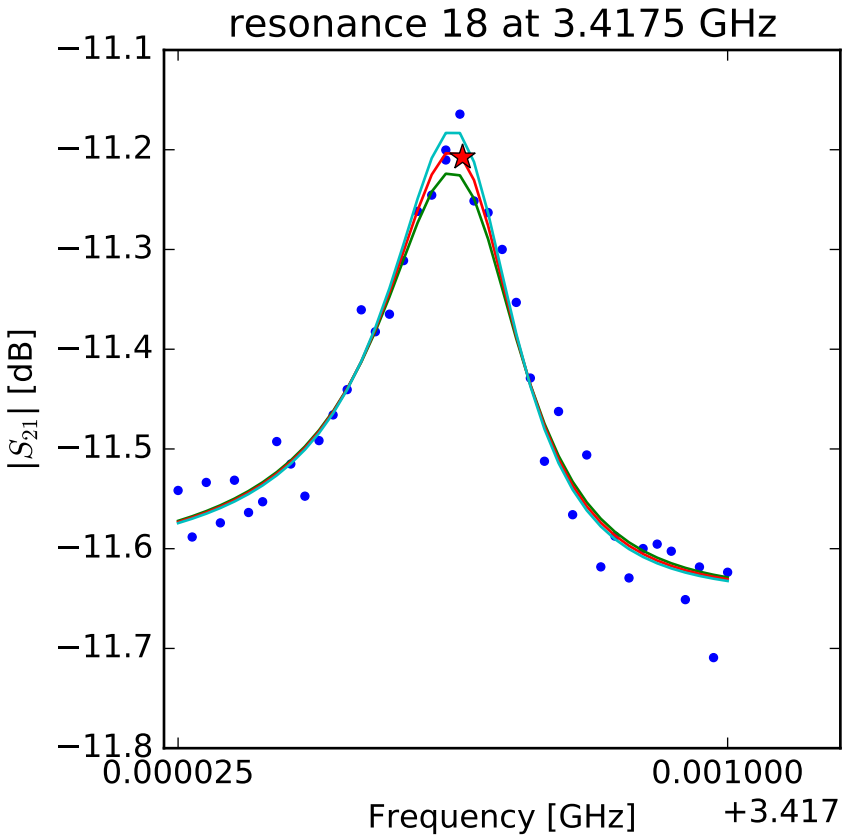
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

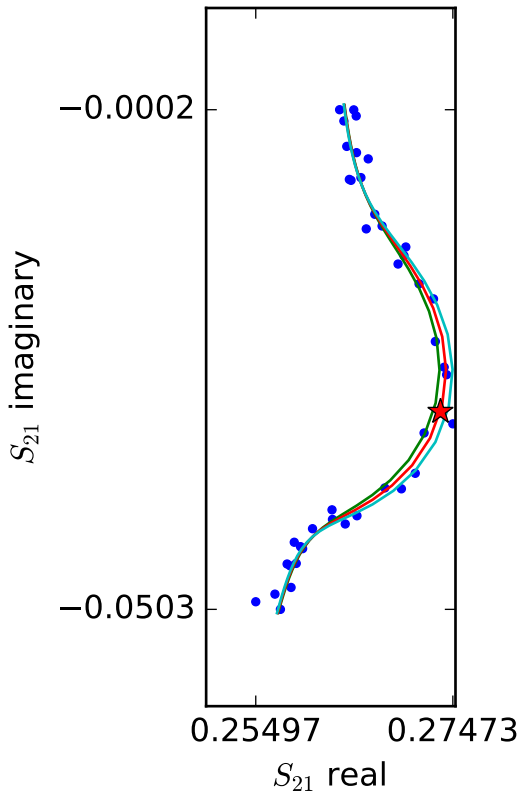
f_r = 3.39351482738
Q_r = 6752.98953406
Q_c = 14134.2001035
a = (0.164256438329+0.190755936382j)
ϕ_0 = 0.387680178401
τ = 27.5532959127

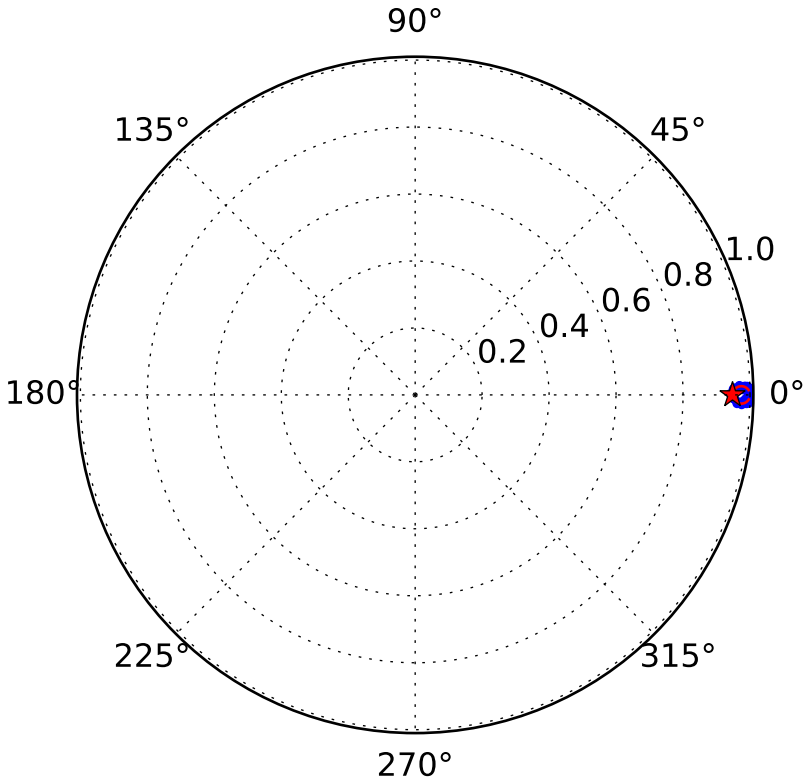


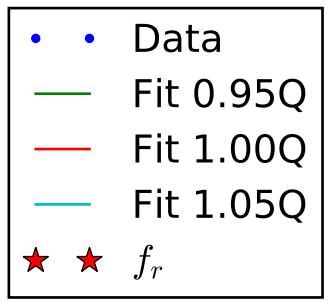
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.40623741097
Q_r = 7715.80211504
Q_c = 21783.6837773
a = (-0.00560903930175-0.262080211835j)
ϕ_0 = 0.658771324792
τ = 27.7297327836



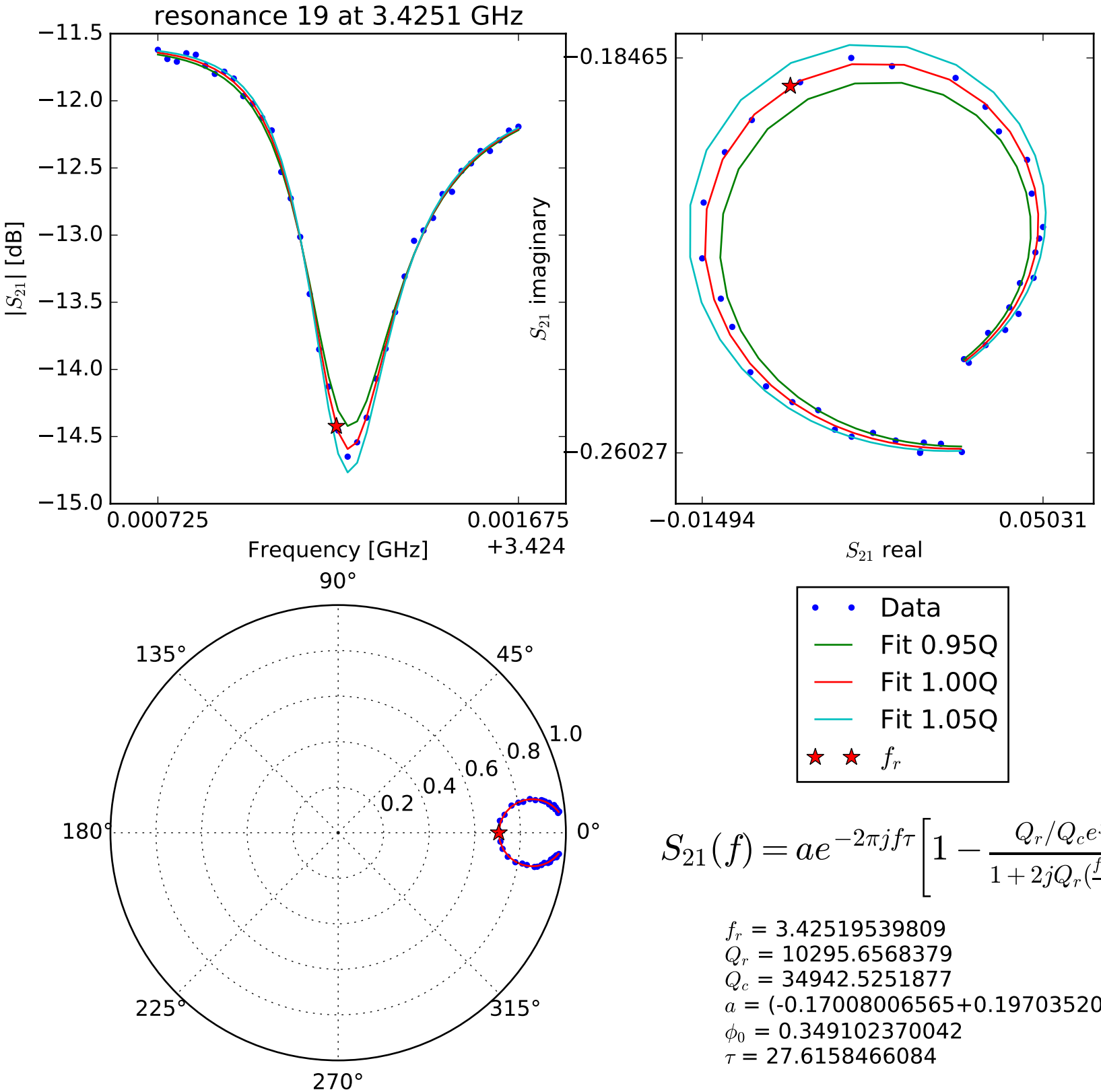






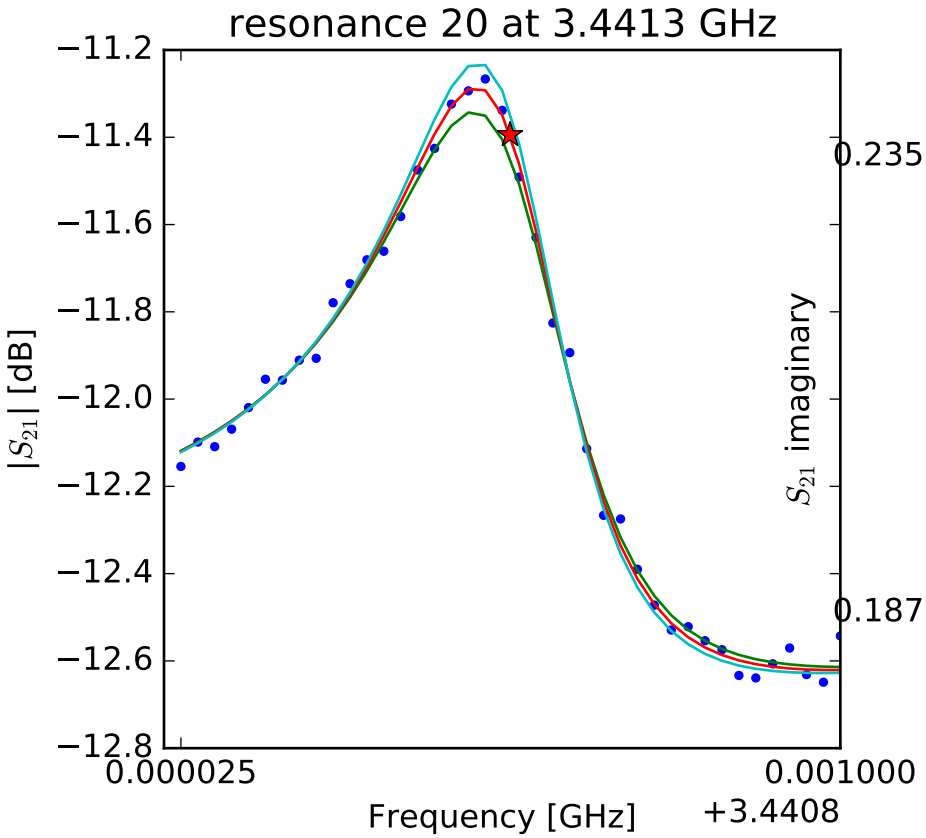
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

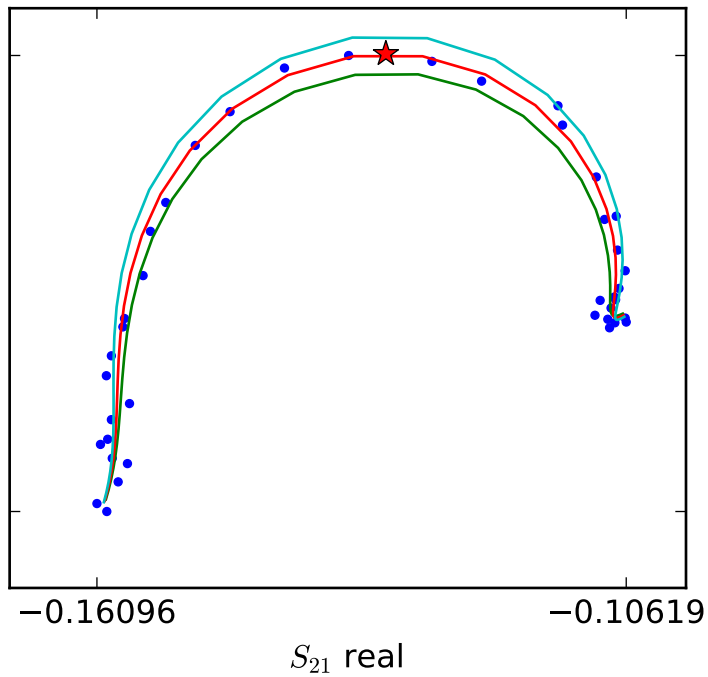
f_r = 3.4175297135
Q_r = 12034.3296255
Q_c = 230349.566429
a = (0.23895542684-0.107285633483j)
ϕ_0 = 2.88261340546
τ = 27.4901669056

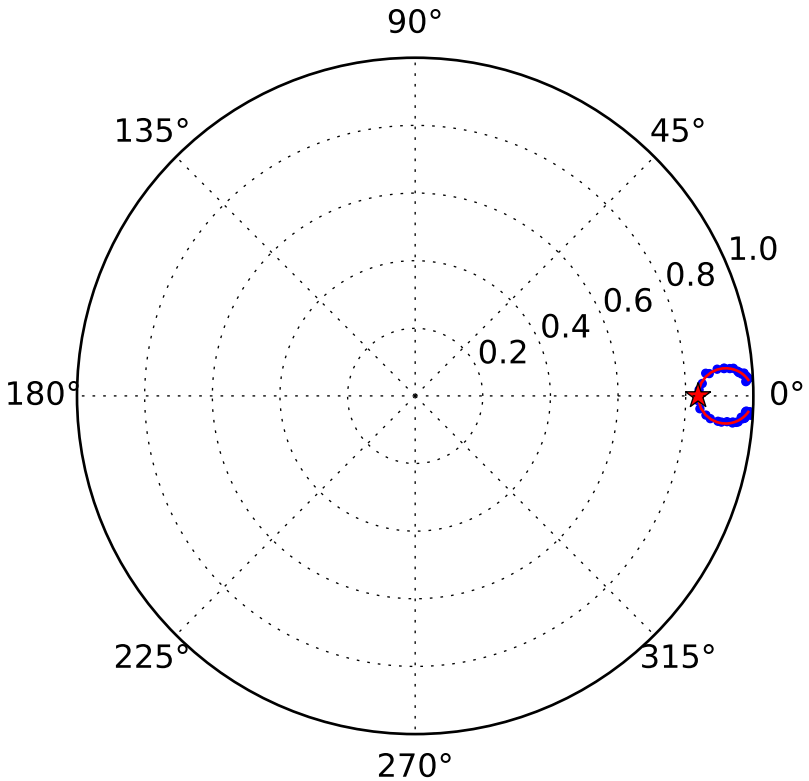


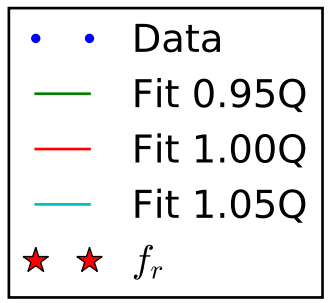
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.42519539809
Q_r = 10295.6568379
Q_c = 34942.5251877
a = (-0.17008006565+0.197035209754j)
ϕ_0 = 0.349102370042
τ = 27.6158466084



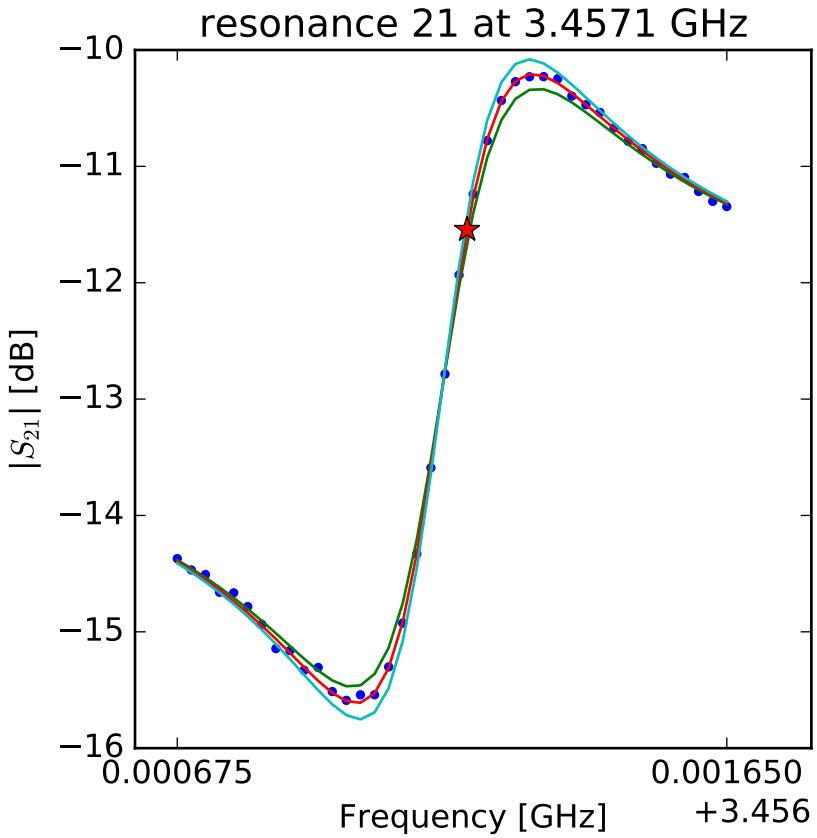


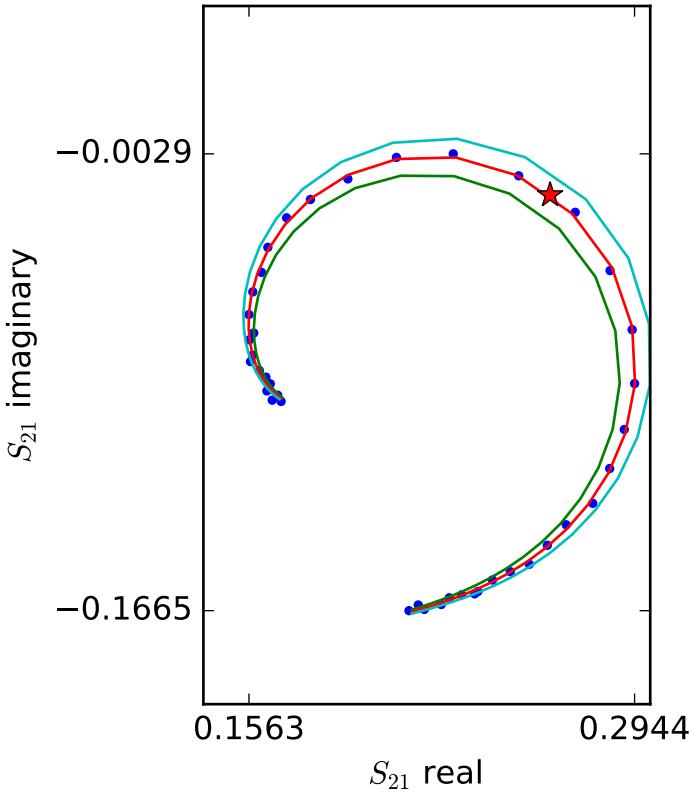


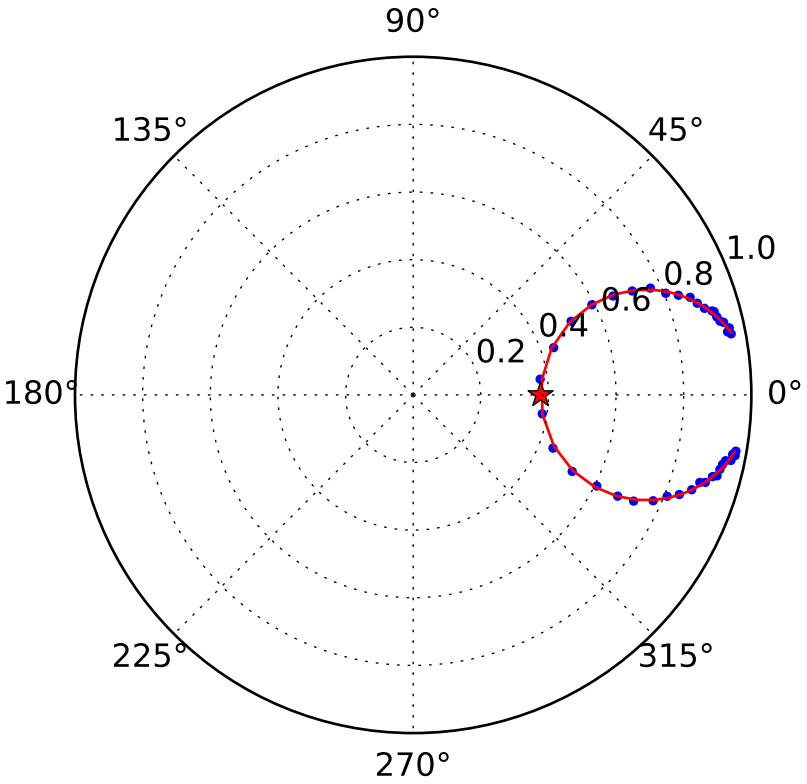


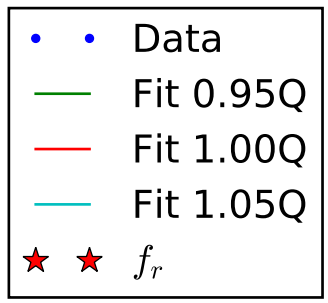
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.44131157648
Q_r = 11045.6991529
Q_c = 67531.503106
a = (0.0567071733588+0.230933378252j)
ϕ_0 = 2.46973674349
τ = 25.5328415868



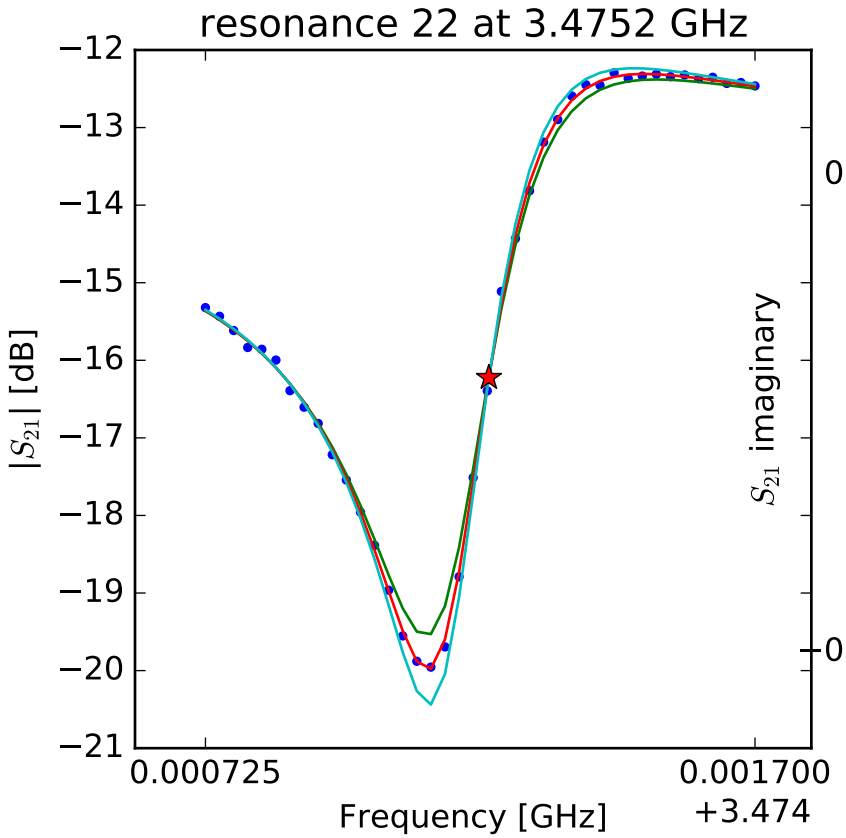


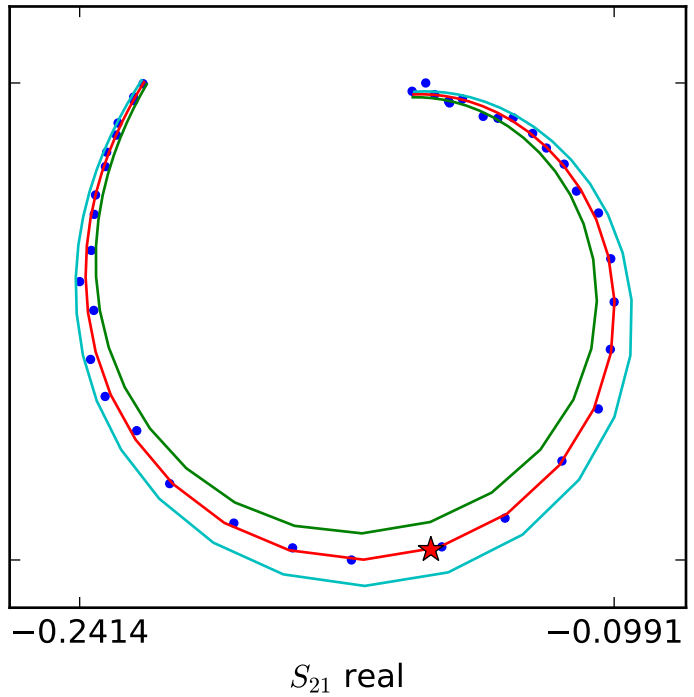


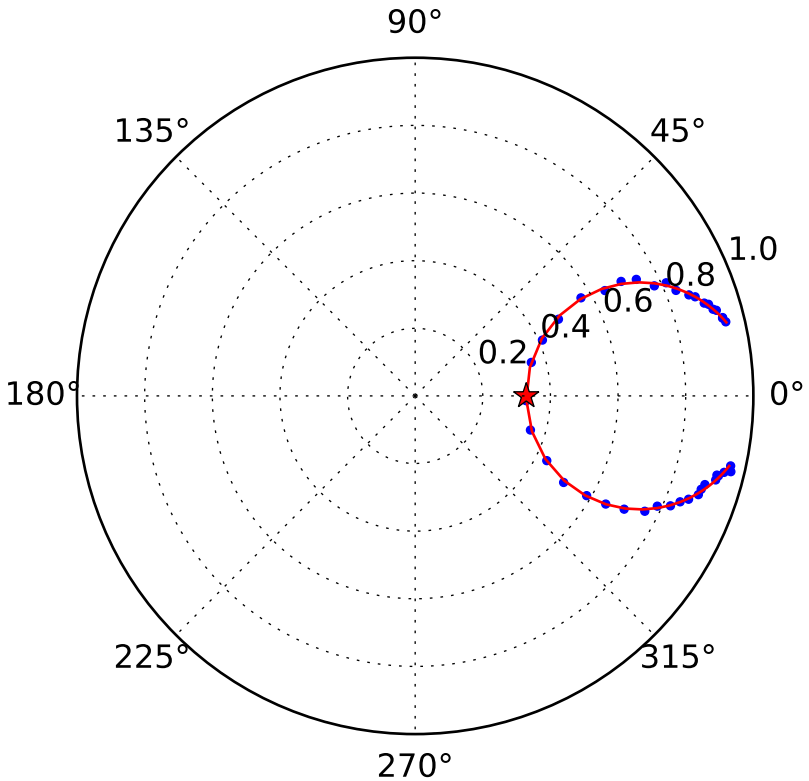


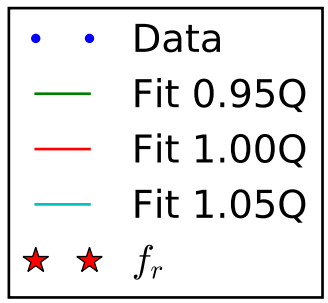
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.45718920308
Q_r = 11410.1783397
Q_c = 18309.2410389
a = (-0.132425343997-0.18762524947j)
ϕ_0 = -1.52309403086
τ = 28.5647087254



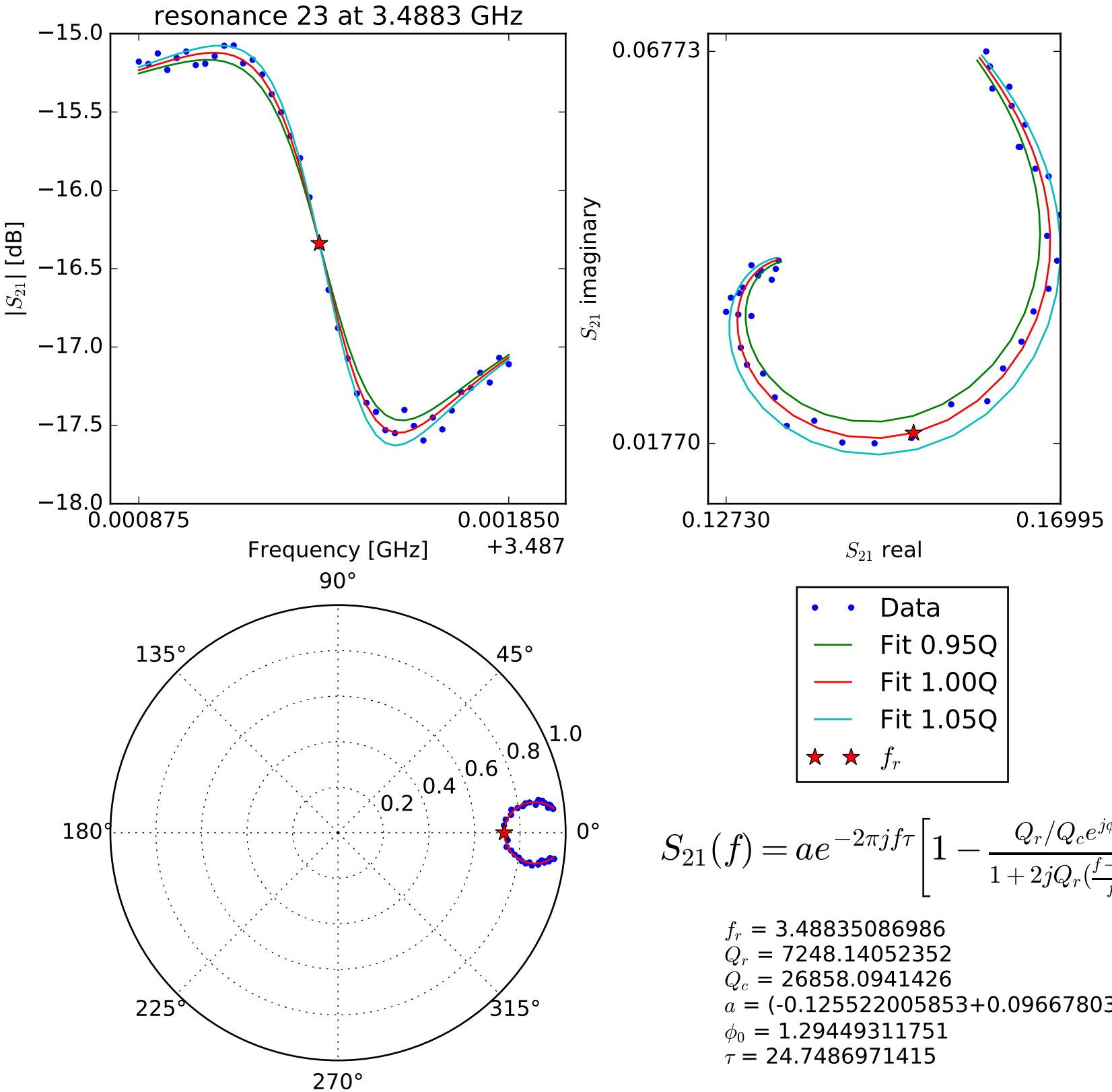






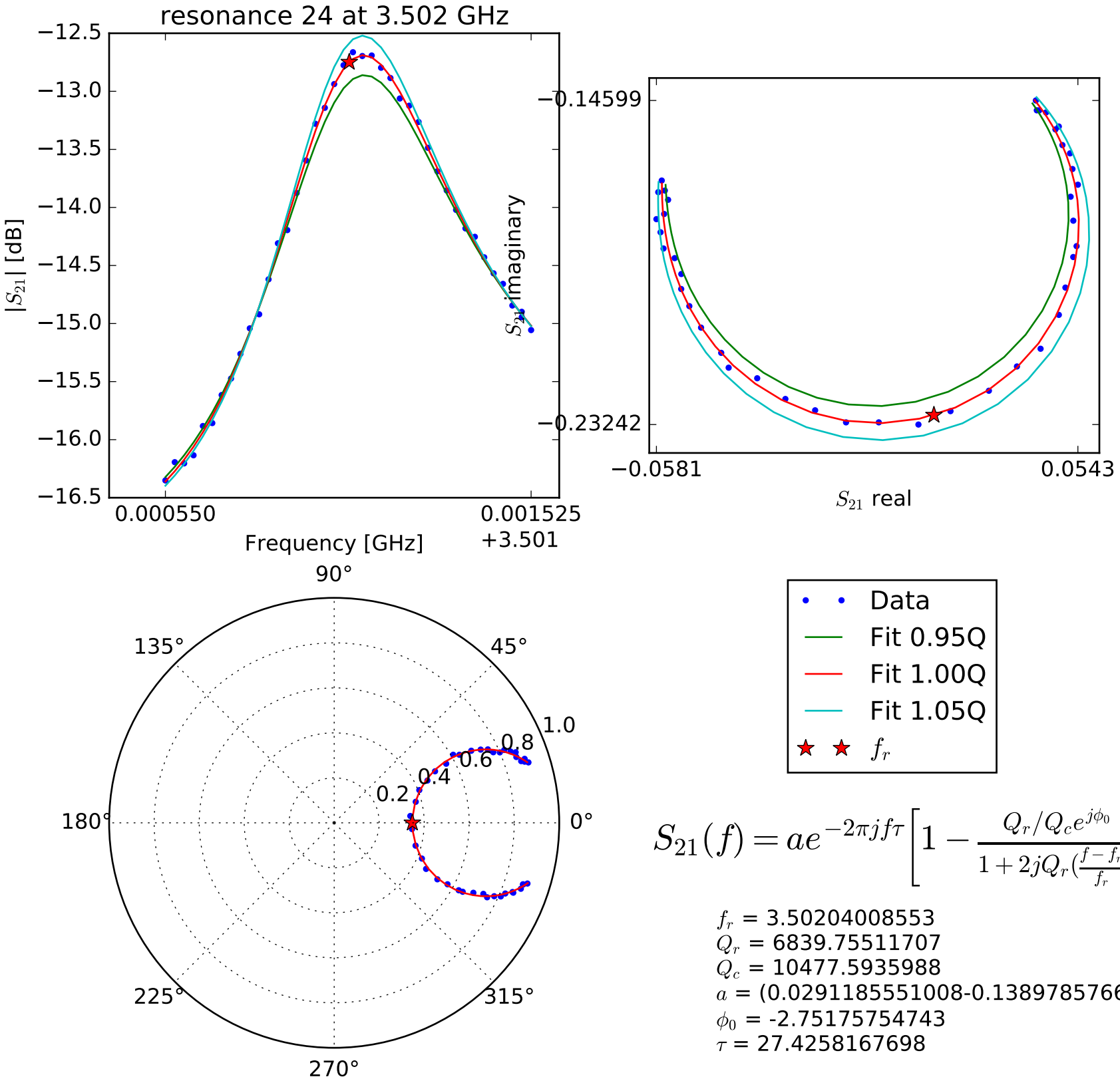
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.47522782207
Q_r = 10010.3972391
Q_c = 14906.1189004
a = (0.152345150752+0.14738649333j)
ϕ_0 = -0.816254026462
τ = 28.3989852765



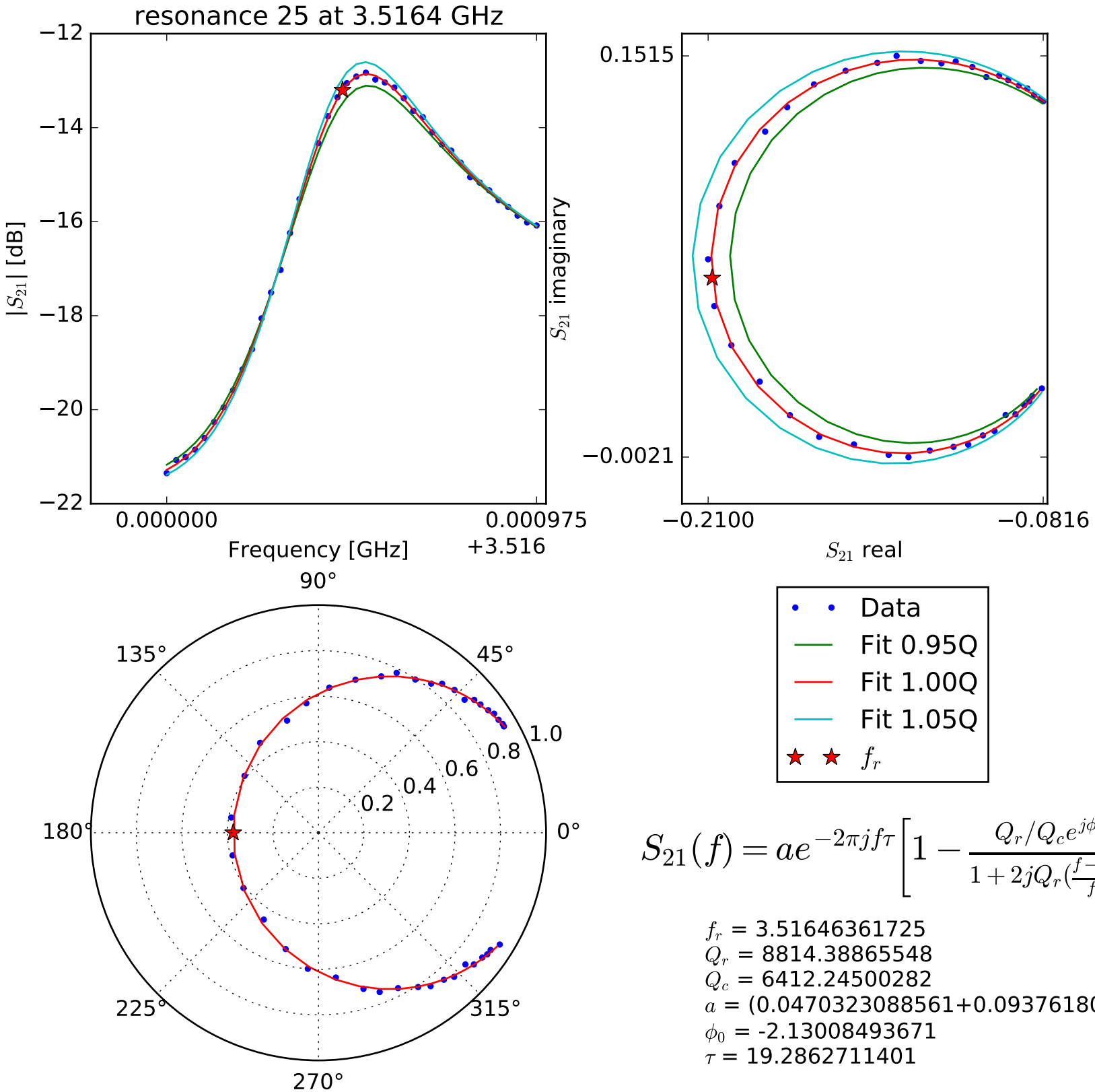
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.48835086986
Q_r = 7248.14052352
Q_c = 26858.0941426
a = (-0.125522005853+0.0966780398182j)
ϕ_0 = 1.29449311751
τ = 24.7486971415



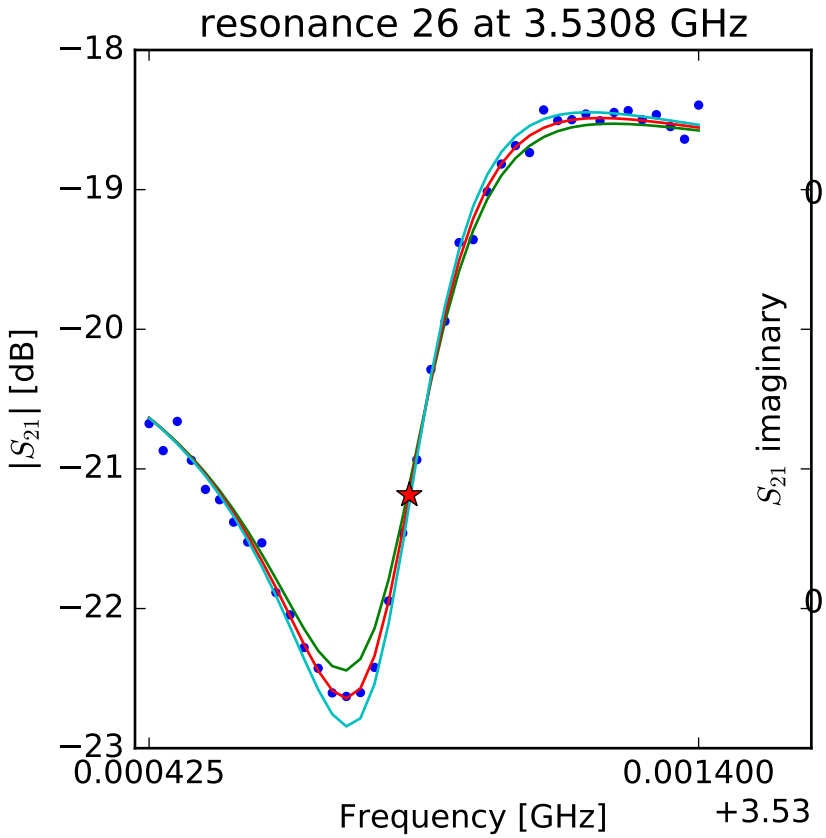
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

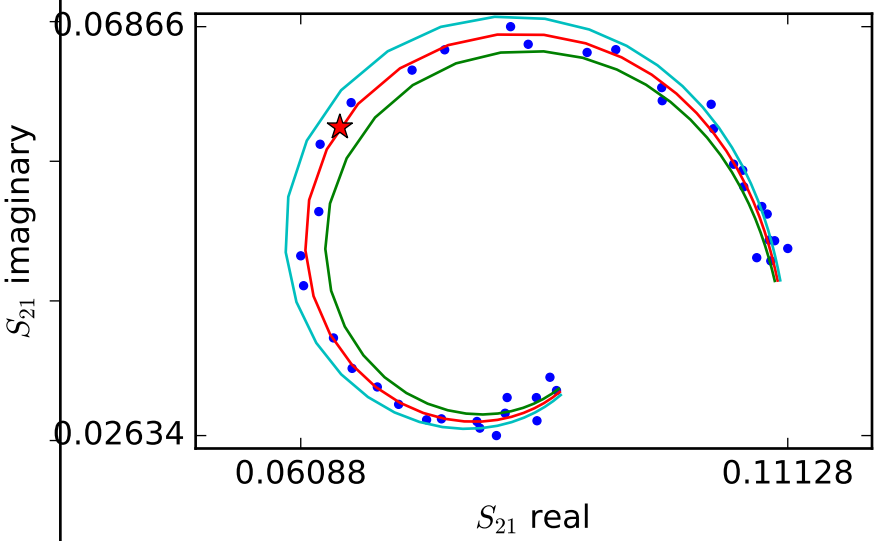
f_r = 3.50204008553
Q_r = 6839.75511707
Q_c = 10477.5935988
a = (0.0291185551008-0.138978576655j)
ϕ_0 = -2.75175754743
τ = 27.4258167698

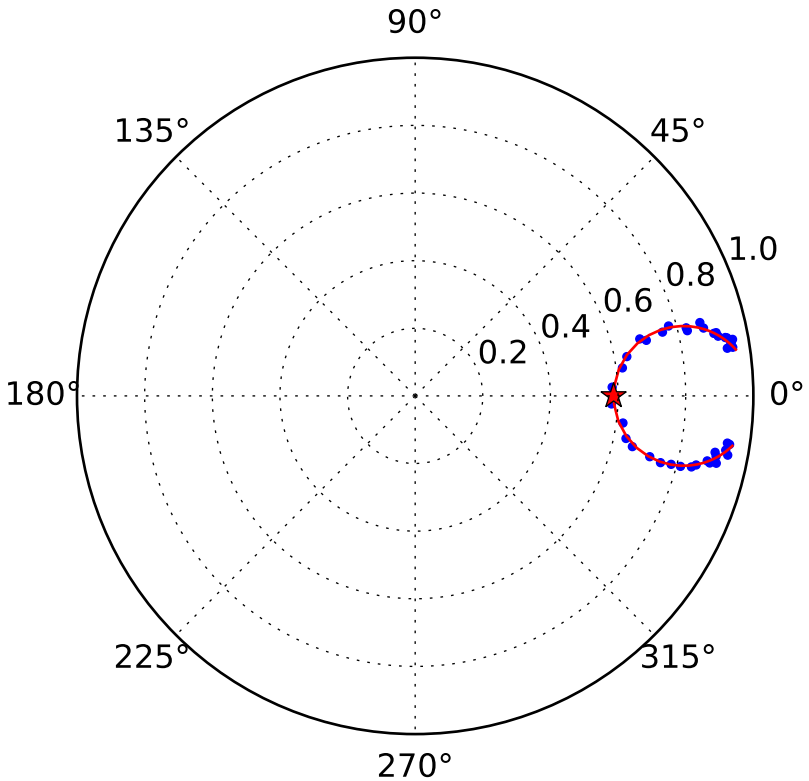


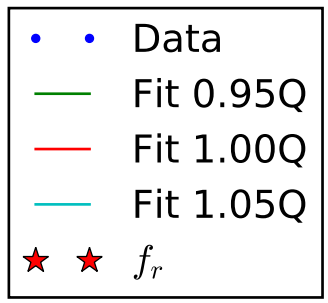
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.51646361725
Q_r = 8814.38865548
Q_c = 6412.24500282
a = (0.0470323088561+0.0937618023992j)
ϕ_0 = -2.13008493671
τ = 19.2862711401



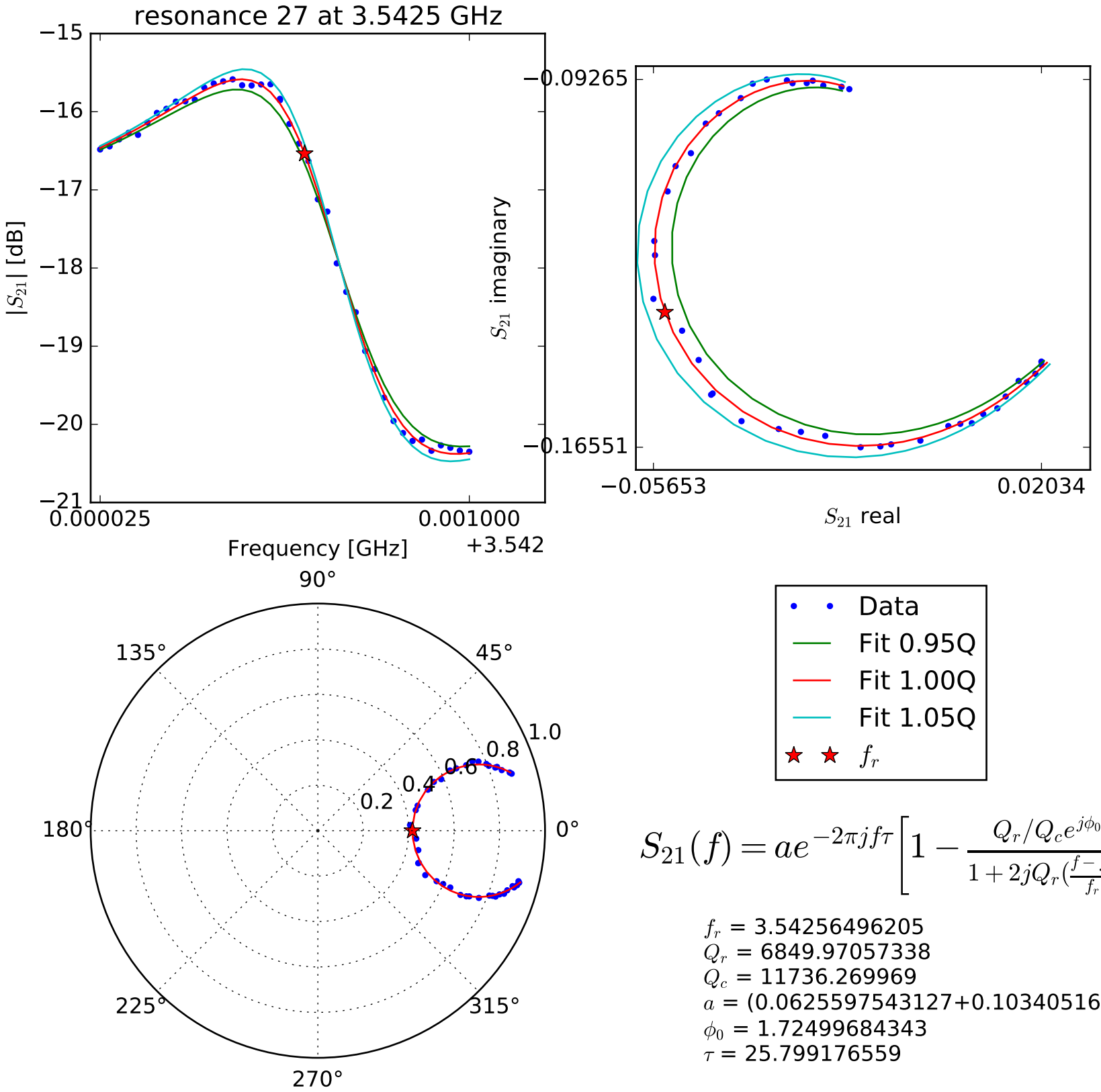






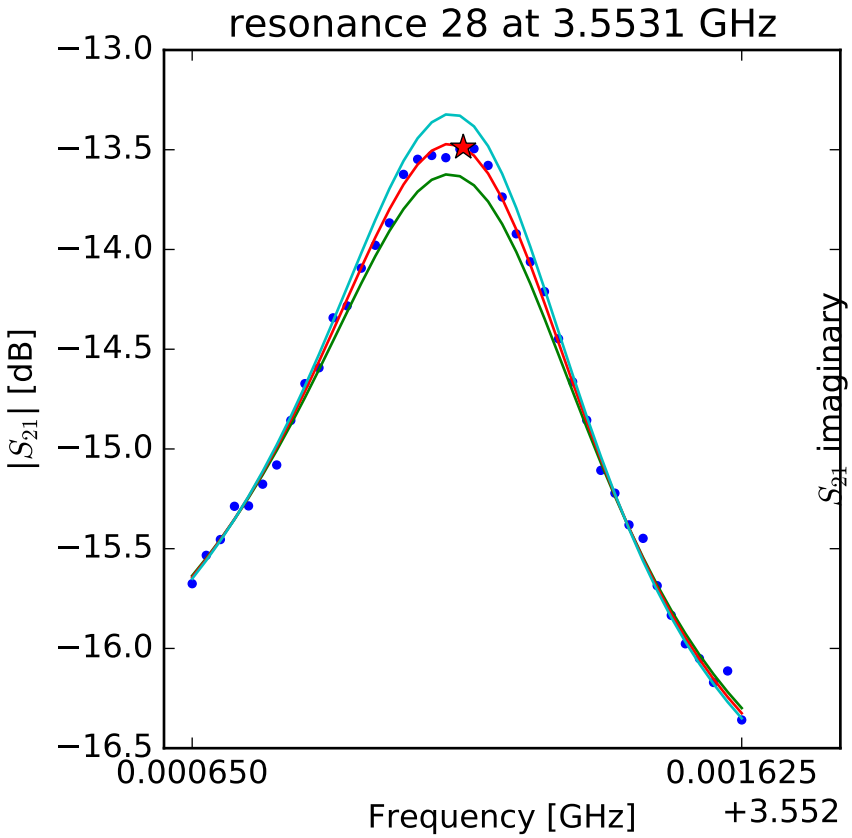
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

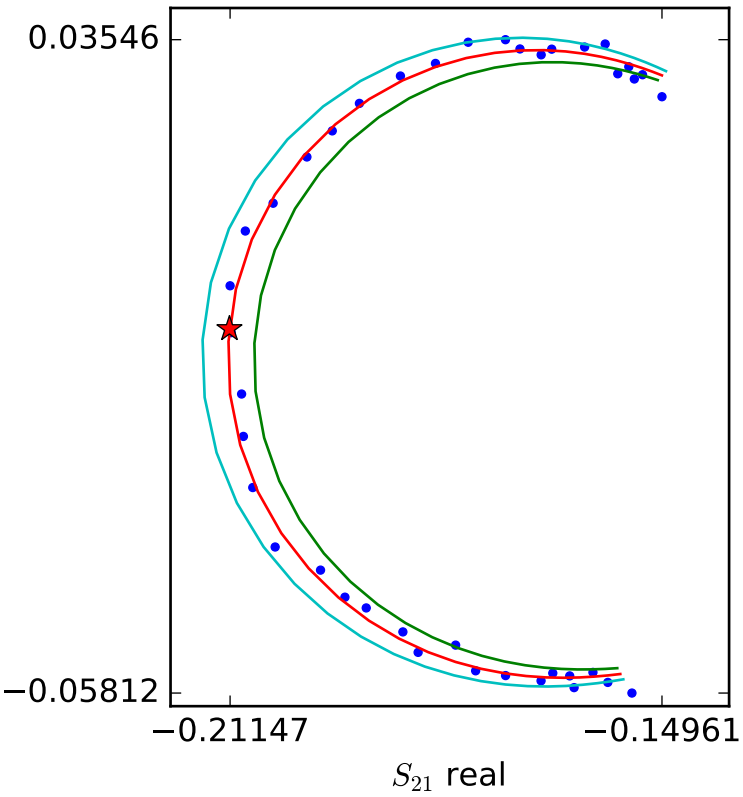
f_r = 3.53088670989
Q_r = 9079.9288675
Q_c = 21970.4740903
a = (-0.0250719998004+0.106631970375j)
ϕ_0 = -0.864204397225
τ = 24.1398105886

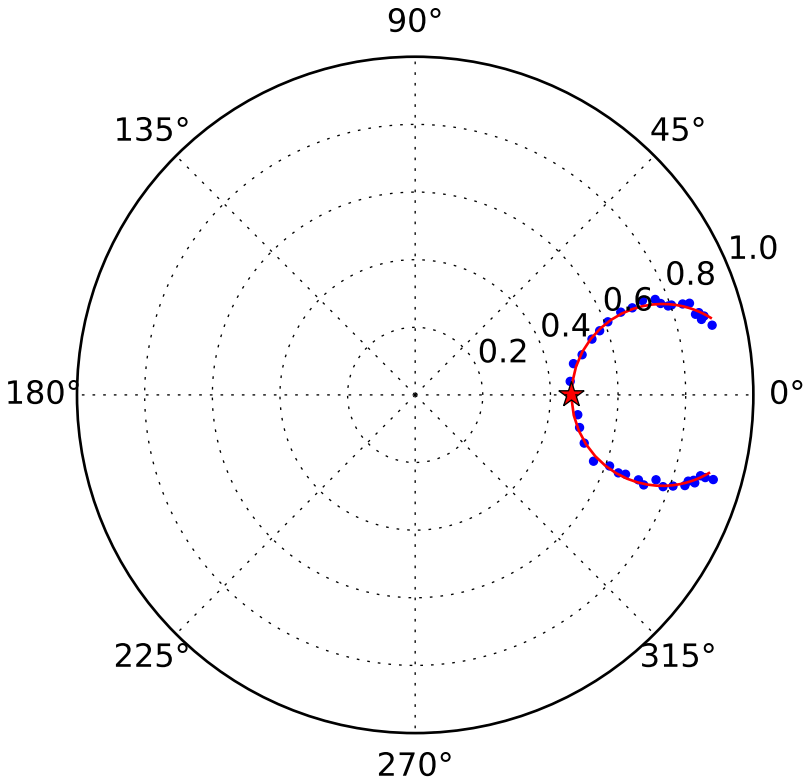


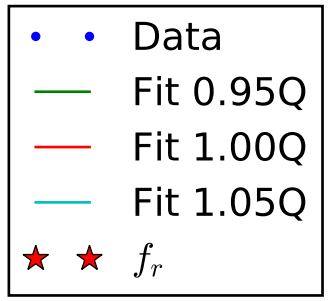
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.54256496205
Q_r = 6849.97057338
Q_c = 11736.269969
a = (0.0625597543127+0.103405166674j)
ϕ_0 = 1.72499684343
τ = 25.799176559



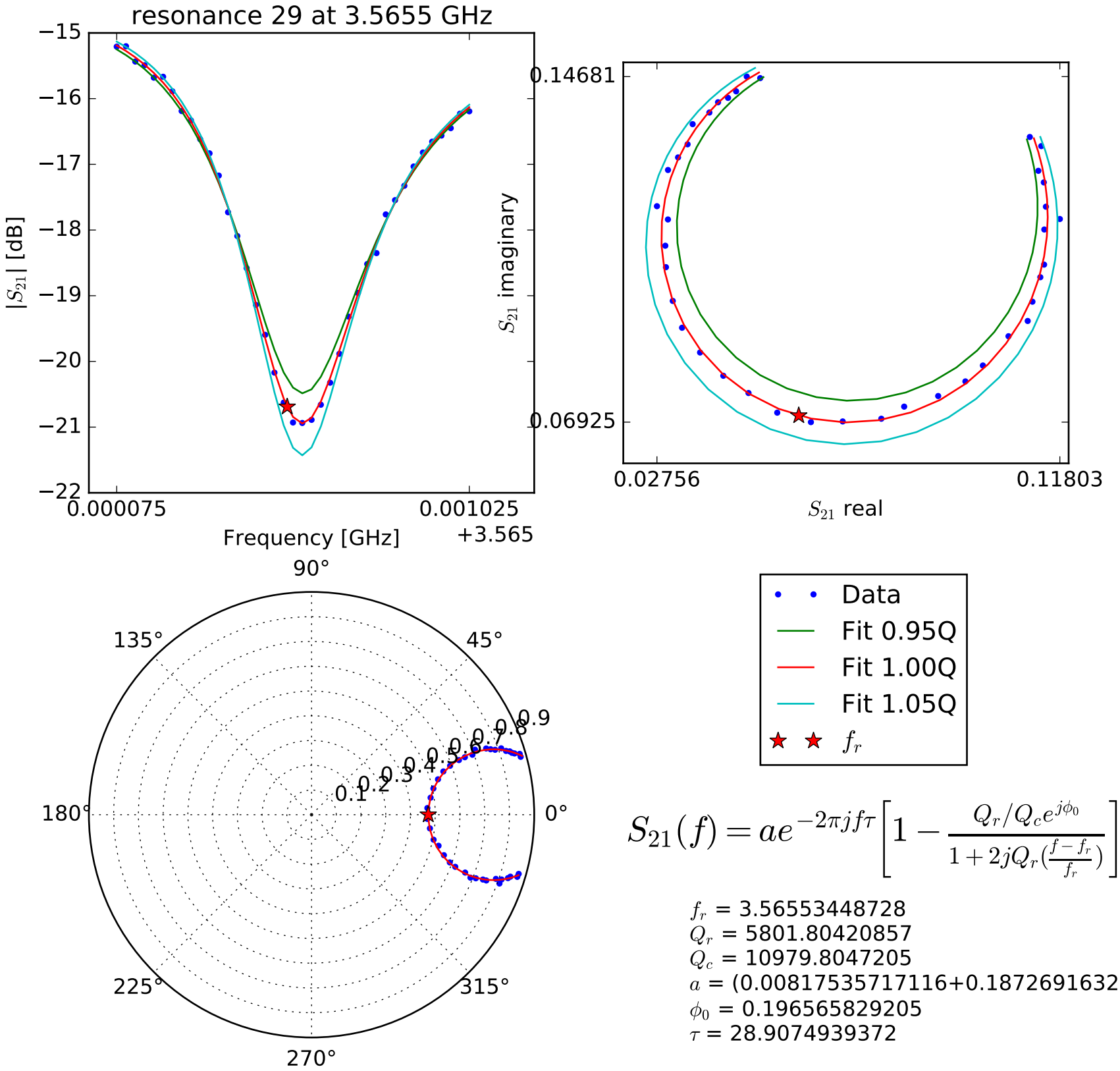






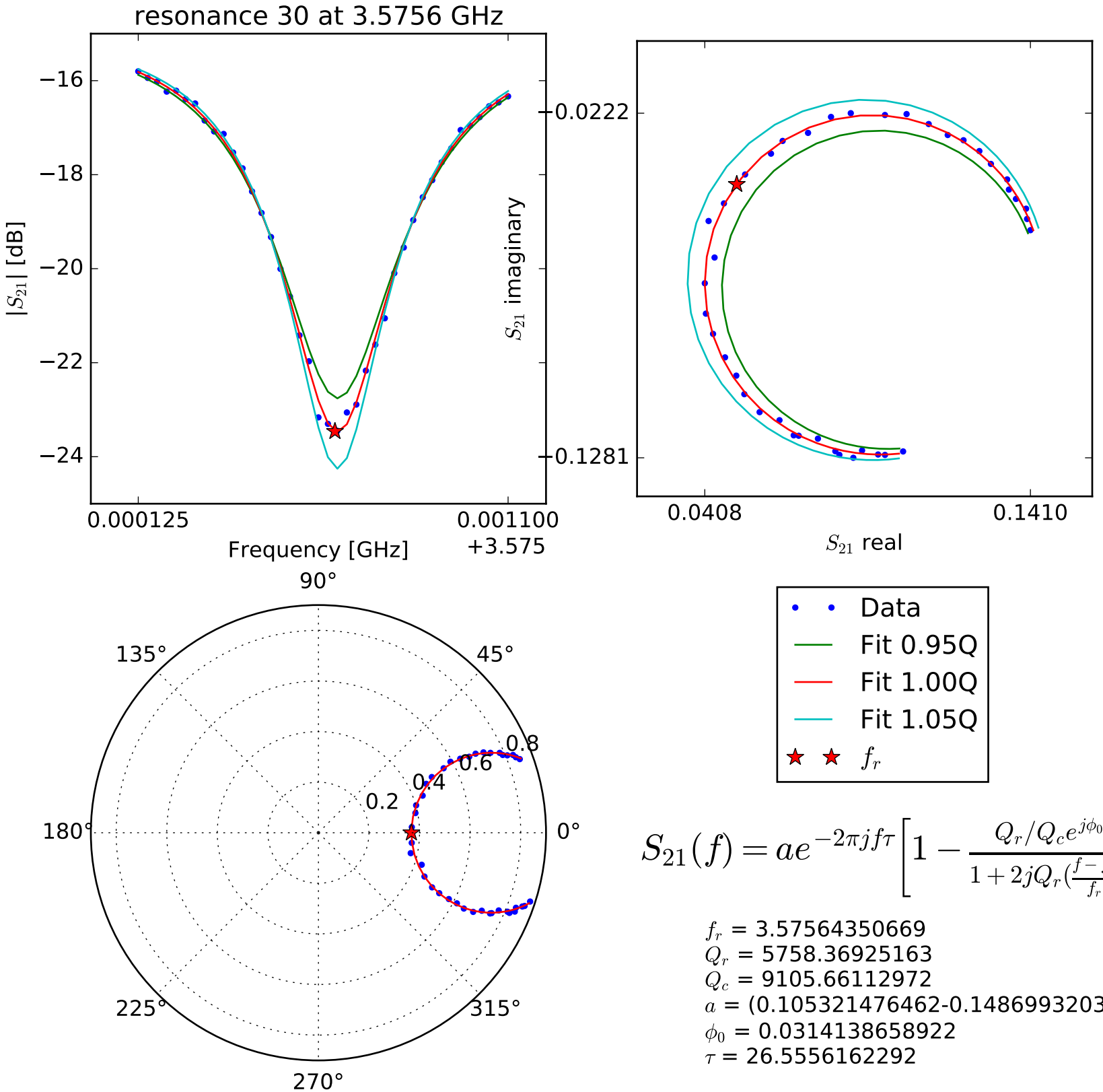
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.55313095039
Q_r = 6497.04544129
Q_c = 12079.6904642
a = (0.109837447057+0.0841018532305j)
ϕ_0 = 2.92846998013
τ = 24.0879604731



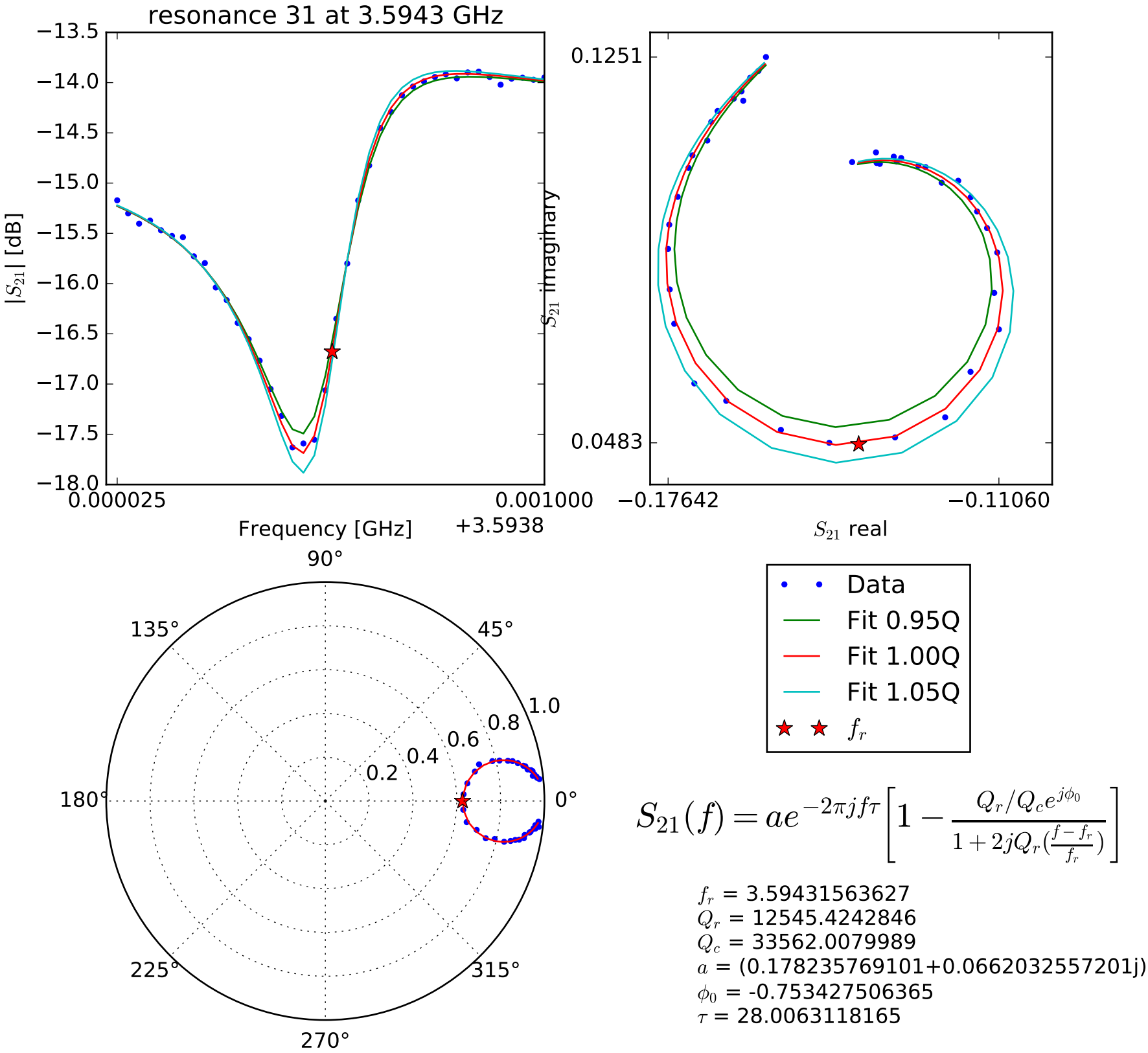
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.56553448728
Q_r = 5801.80420857
Q_c = 10979.8047205
a = (0.00817535717116+0.187269163209j)
ϕ_0 = 0.196565829205
τ = 28.9074939372



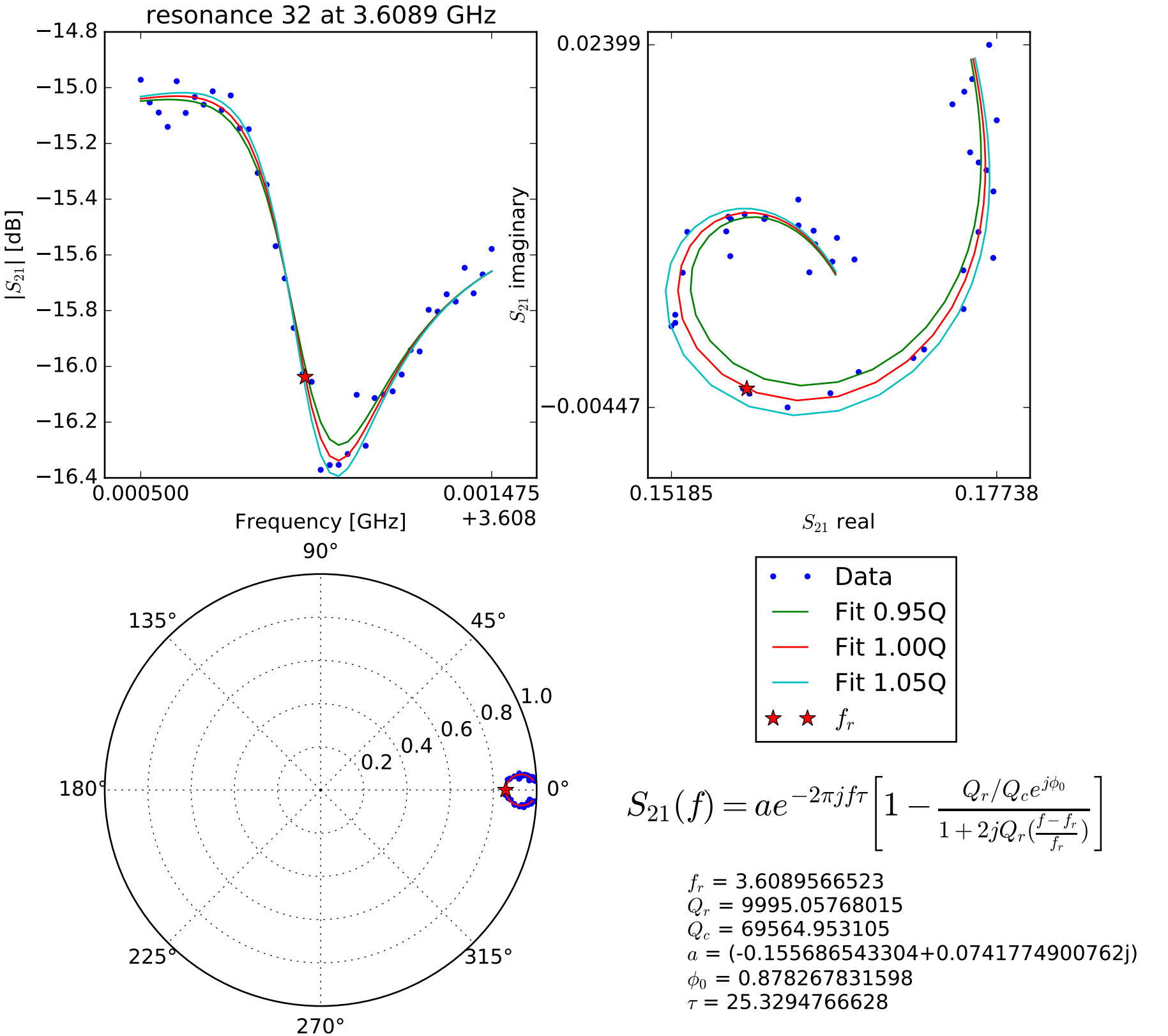
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.57564350669
Q_r = 5758.36925163
Q_c = 9105.66112972
a = (0.105321476462-0.148699320333j)
ϕ_0 = 0.0314138658922
τ = 26.5556162292



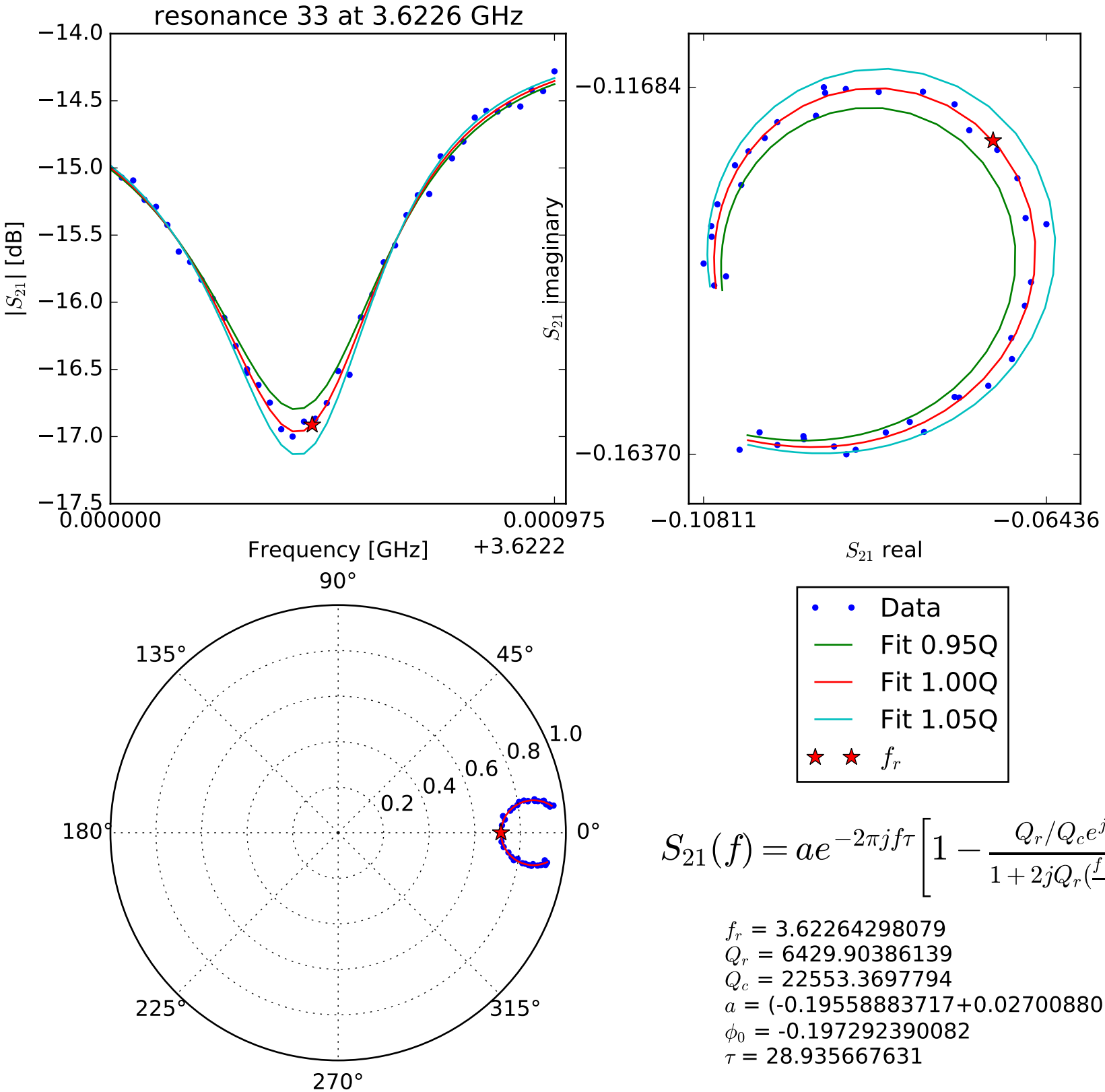
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.59431563627
Q_r = 12545.4242846
Q_c = 33562.0079989
a = (0.178235769101+0.0662032557201j)
ϕ_0 = -0.753427506365
τ = 28.0063118165



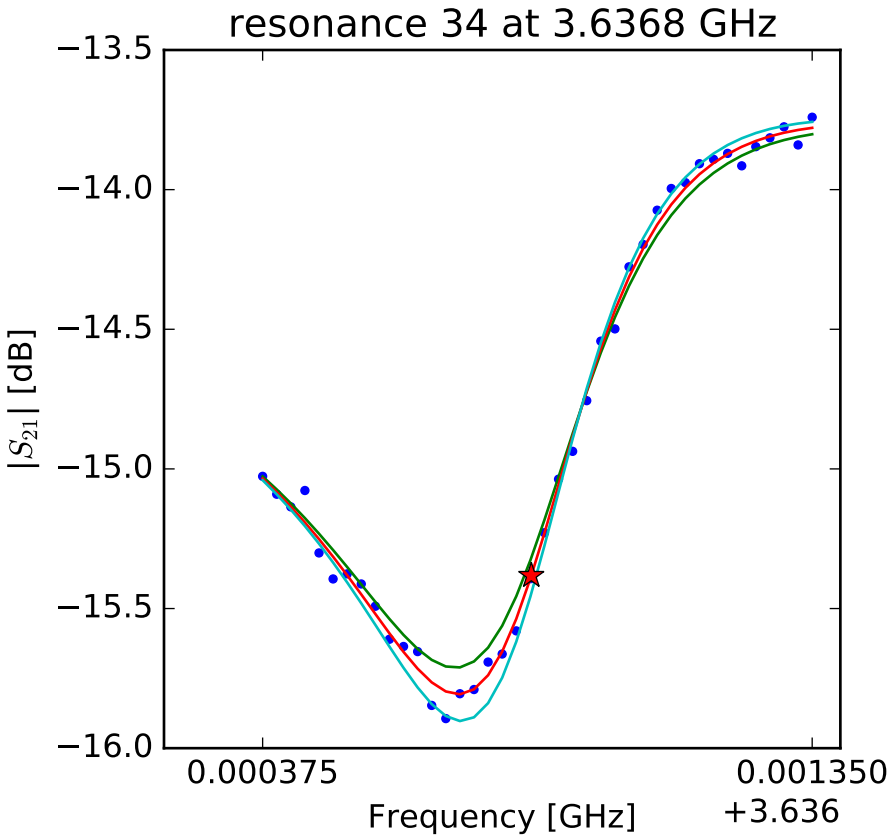
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

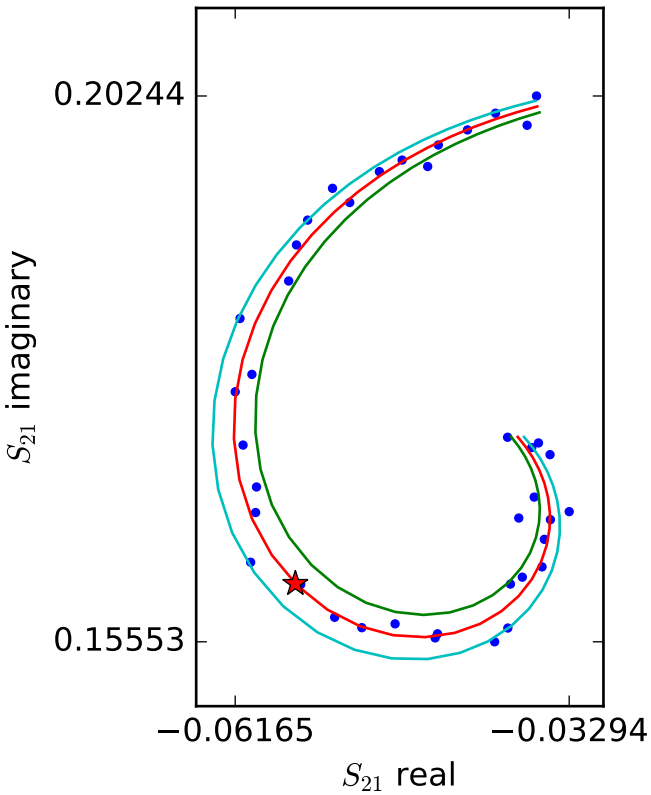
f_r = 3.6089566523
Q_r = 9995.05768015
Q_c = 69564.953105
a = (-0.155686543304+0.0741774900762j)
ϕ_0 = 0.878267831598
τ = 25.3294766628

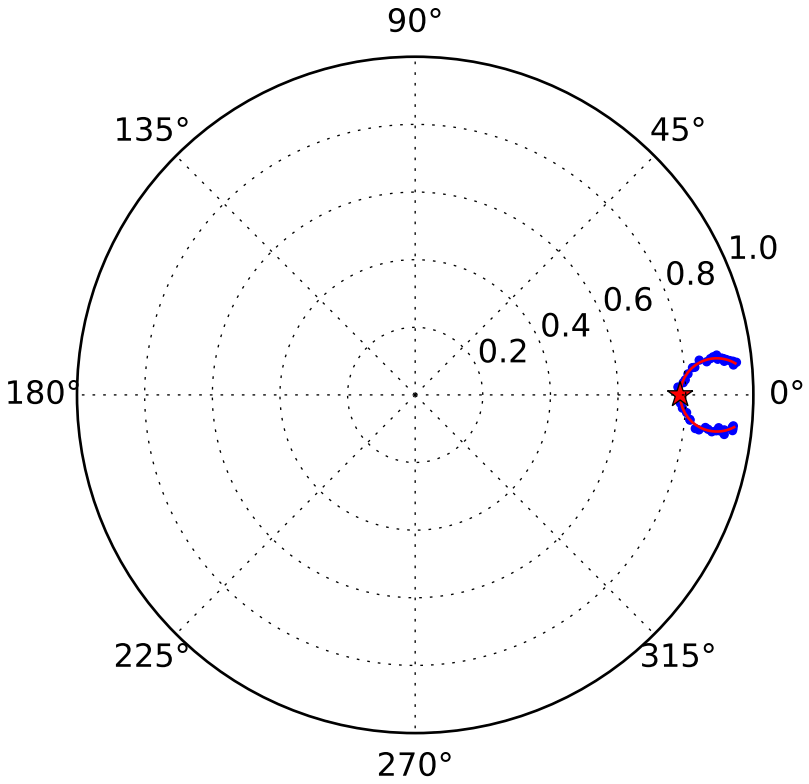


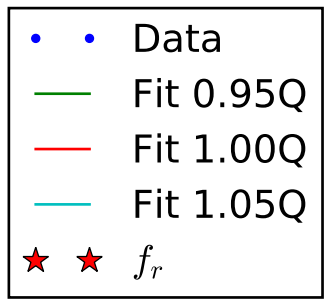
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.62264298079
Q_r = 6429.90386139
Q_c = 22553.3697794
a = (-0.19558883717+0.0270088072138j)
ϕ_0 = -0.197292390082
τ = 28.935667631



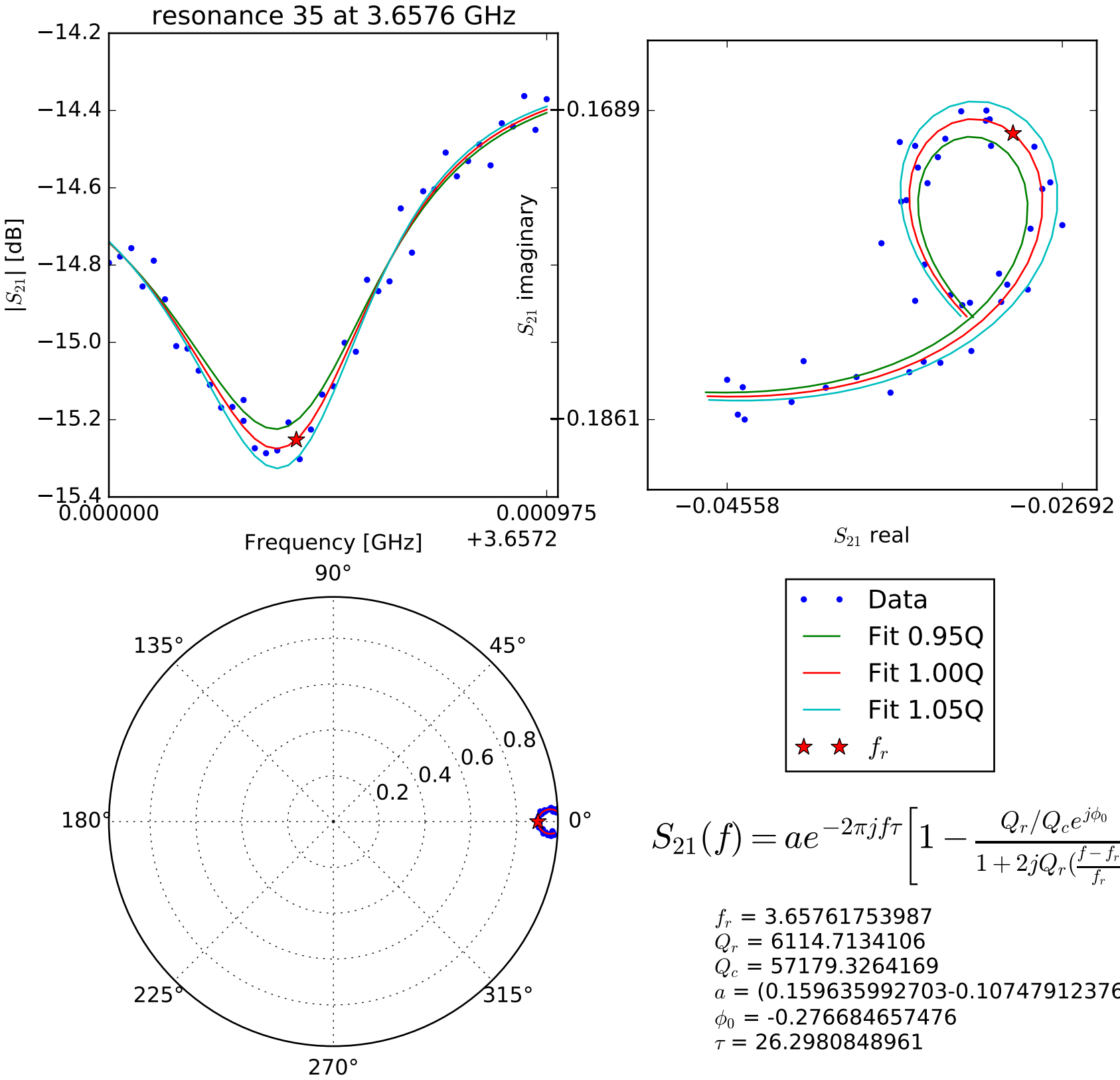






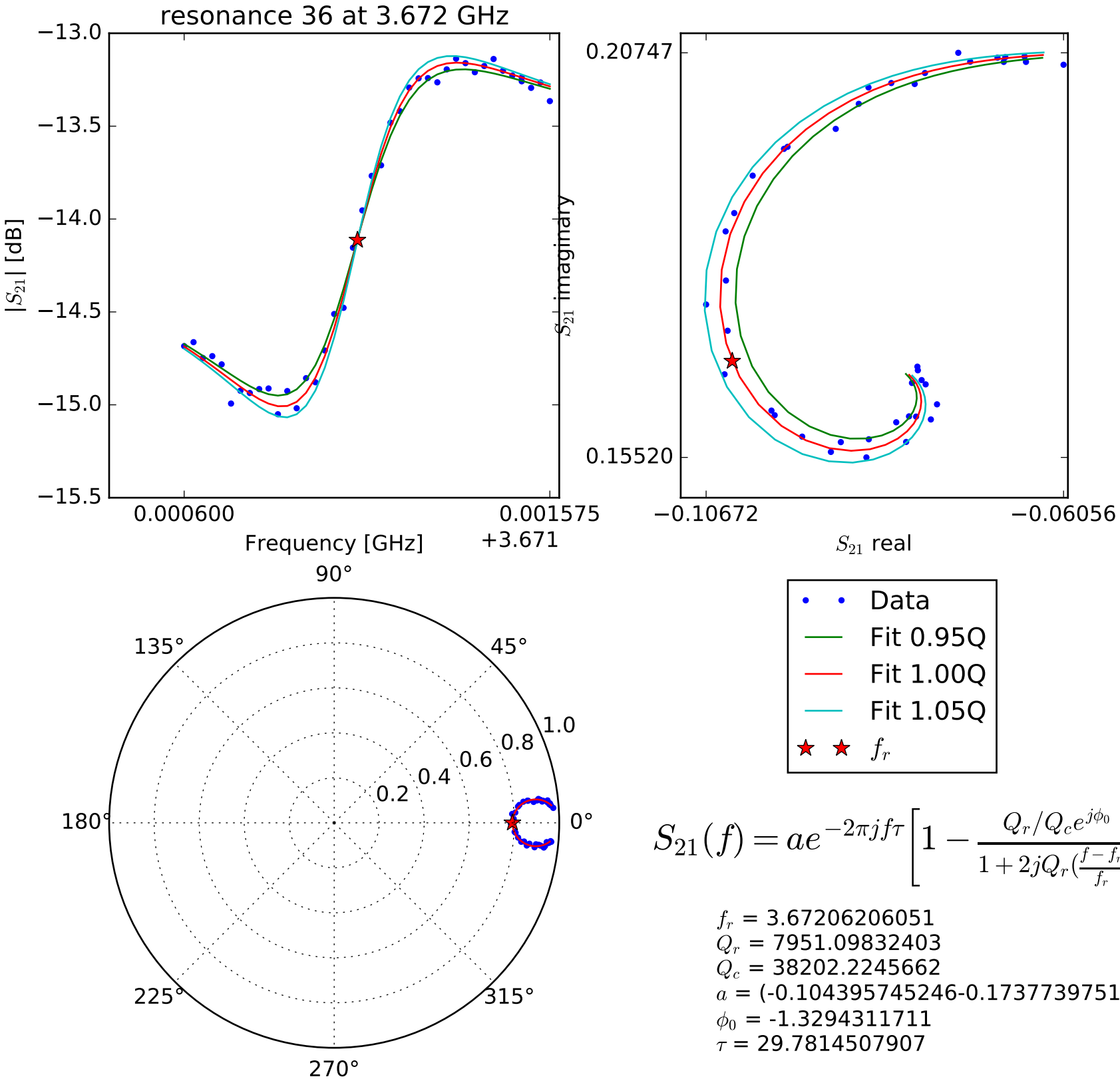
$$S_{21}(f) = ae^{-2\pi jf\tau}\left[1 - \frac{Q_r/Q_c e^{j\phi_0}}{1 + 2jQ_r(\frac{f-f_r}{f_r})}\right]$$

f_r = 3.63685169307
Q_r = 6389.67097259
Q_c = 29498.5621203
a = (-0.145044167375+0.135229729279j)
ϕ_0 = -0.771643988203
τ = 27.8001137203



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

f_r = 3.65761753987
Q_r = 6114.7134106
Q_c = 57179.3264169
a = (0.159635992703-0.10747912376j)
ϕ_0 = -0.276684657476
τ = 26.2980848961



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

f_r = 3.67206206051
Q_r = 7951.09832403
Q_c = 38202.2245662
a = (-0.104395745246-0.173773975168j)
ϕ_0 = -1.3294311711
τ = 29.7814507907