

BSSNET2A-111W 17BSS
Off-Axis Antenna Plots

CONUS Beam Maximum Allowable EIRP / Antenna Gain¹ to Meet -117dBW/m²/100KHz

CONUS BEAM	
Satellite Location ^o WL	-110.90
Nearest DBS Satellite Location ^o WL	-110.20
Miniumum Spacing (w/Station Keeping @+--0.05)	-0.60
Max PFD Flux Density, -117 dBW/m ² /100 kHz	-117.0
Channel Bandwidth, MHz	26.0
Effective Bandwidth, dB-100 kHz	24.1
PFD Flux Density Allowed per Channel, dBW/m ²	-92.9
R, Radial Distance to GEO, km	42,164.0
Min. Angle of Separation between Satellites, deg	-0.60
Range between Satellites, km	441.5
Spreading factor, dB/ m ²	-123.9
Atmospheric loss, dB	0
Maximum EIRP Allowed at Minimum Separation, dBW	31.0
Peak Satellite EIRP, dBW ²	60.2
Boresight Antenna Gain, dB ³	37.1
Tx Power into Antenna, dBW	23.1
Max Antenna Gain to Meet Space Path Spec, dB	7.9
Max Off-Axis EIRP from Plots ⁴ , dBW	5.38
Max Antenna Gain from Plots, dB	-17.72
PFD / Ant Gain Margin, dB	25.7

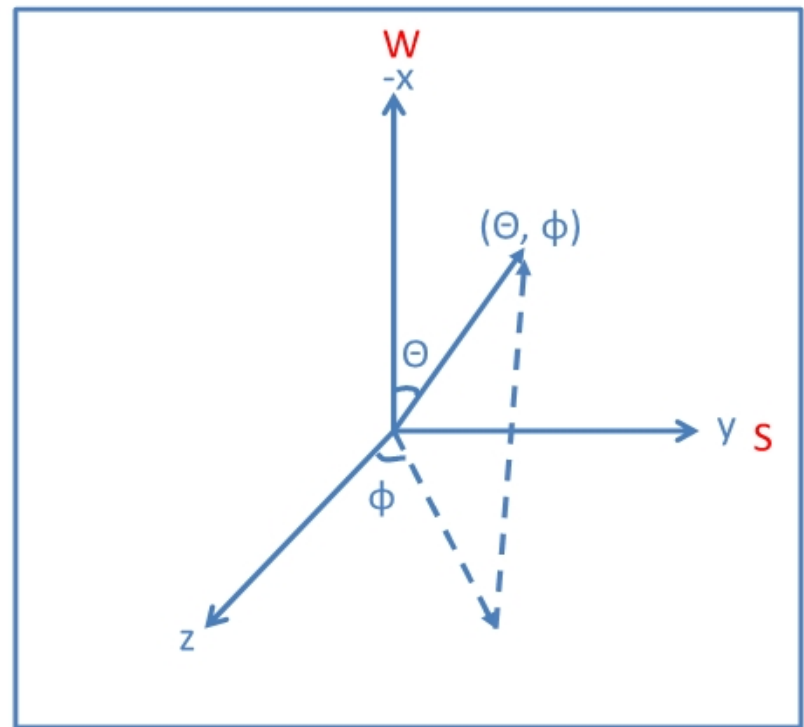
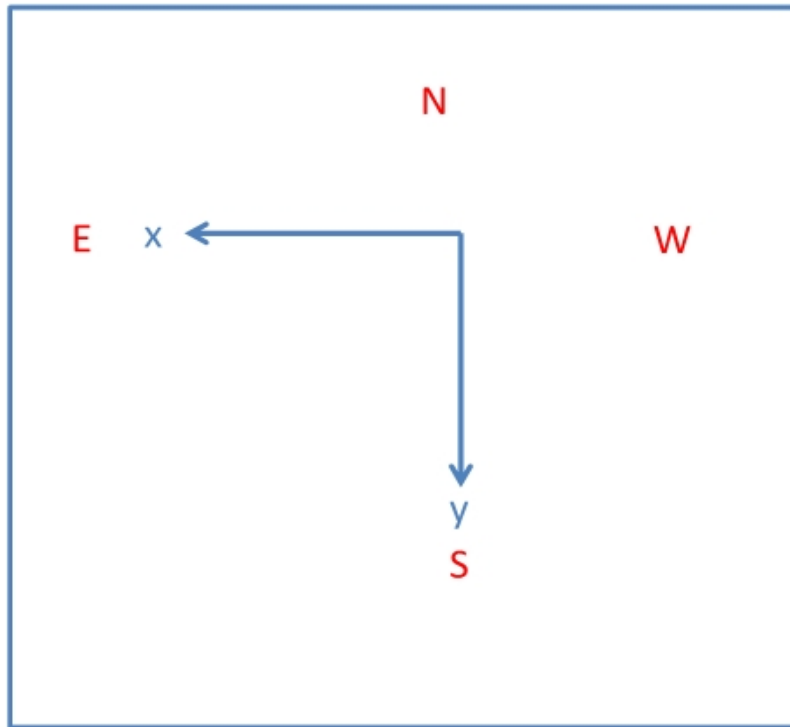
¹ As defined in FCC Section 25.264(a)

² from Schedule S7
temperature and life]

³ from Schedule S7, column (c)

⁴ Reference to Plot File: tx-17.5-rhcp--10.cut and tx-17.7-lhcp-0.cut

Coordinate System



CONUS Beam, -X Axis Plots

- Both polarizations; RHCP; LHC)
- $-30 < \Theta < 30$ ($\Theta=0$: +X-axis)
- $-60 < \phi < 60$
- Freqs = 17.305, 17.5 and 17.695 GHZ

- The zero reference line on each plot is the peak off-axis gain in the title of the chart
- All off-axis gain levels are well below the 7.9 dBi level at 0.6° separation (>25 dB margin)

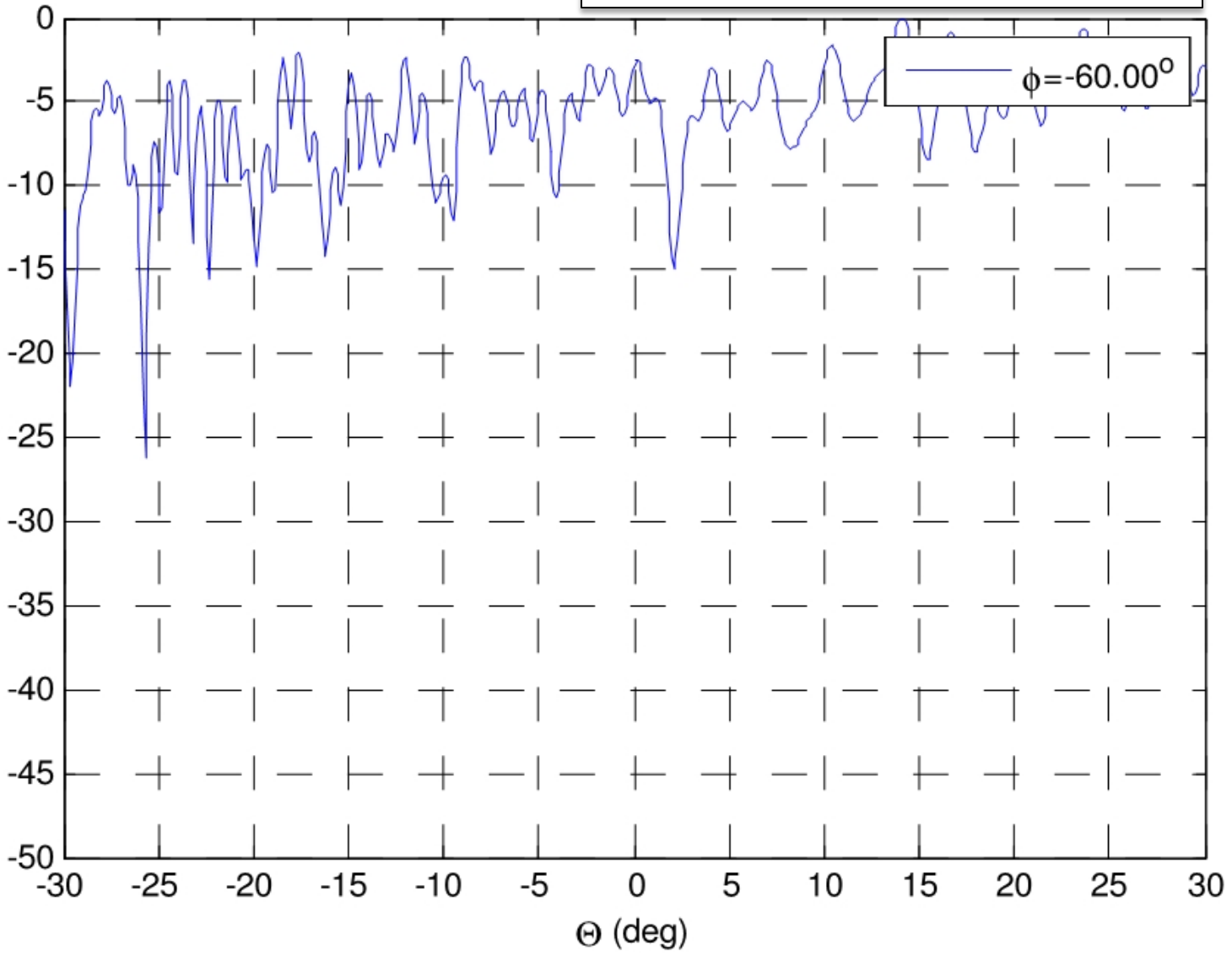
RHCP = 17.305 GHz

Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp--60.cut,

Peak Off-axis Gain = -24.9 dBi

Off-axis Gain Below Peak (dBi)

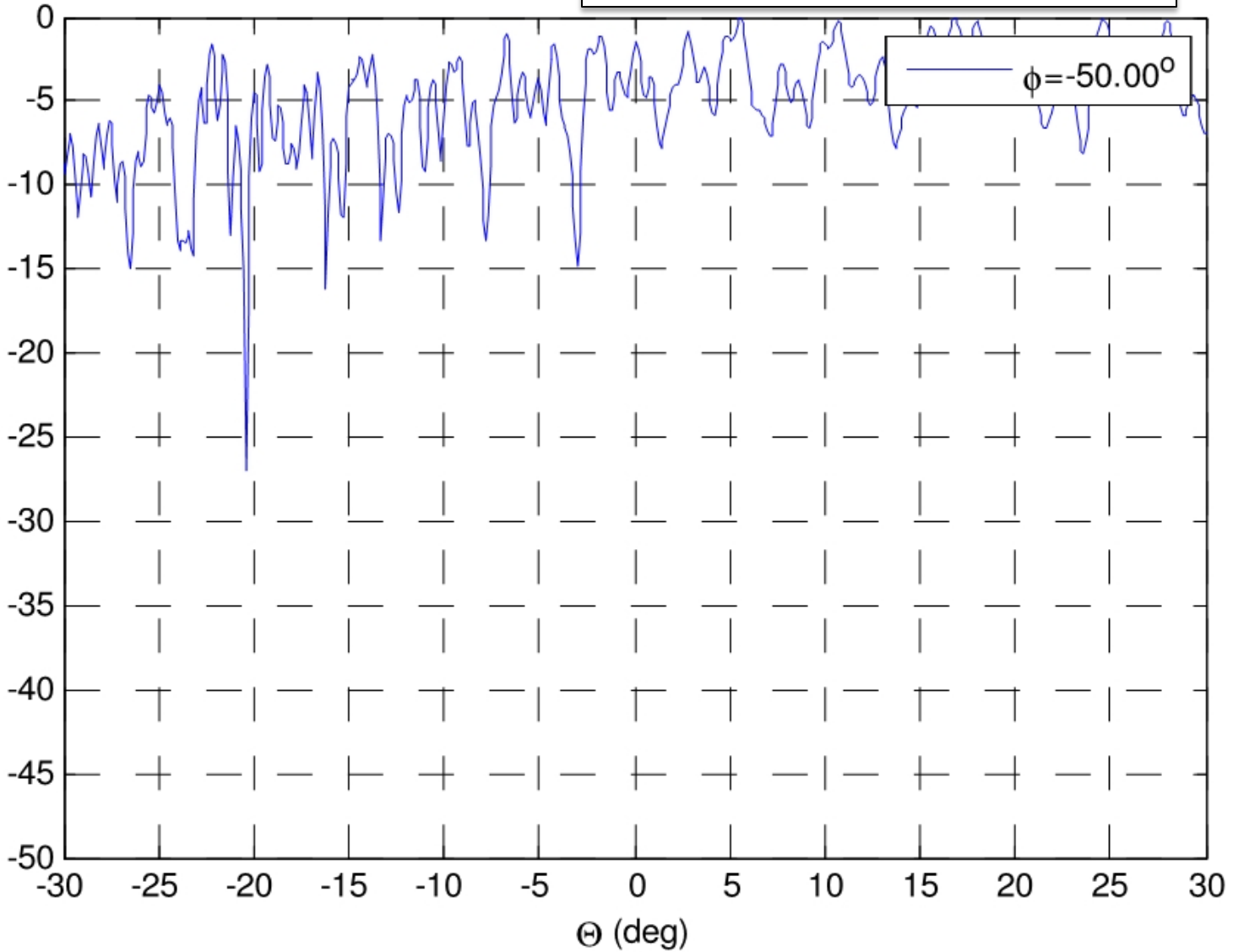


Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp--50.cut,

Peak Off-axis Gain = -26.0 dBi

Off-axis Gain Below Peak (dBi)

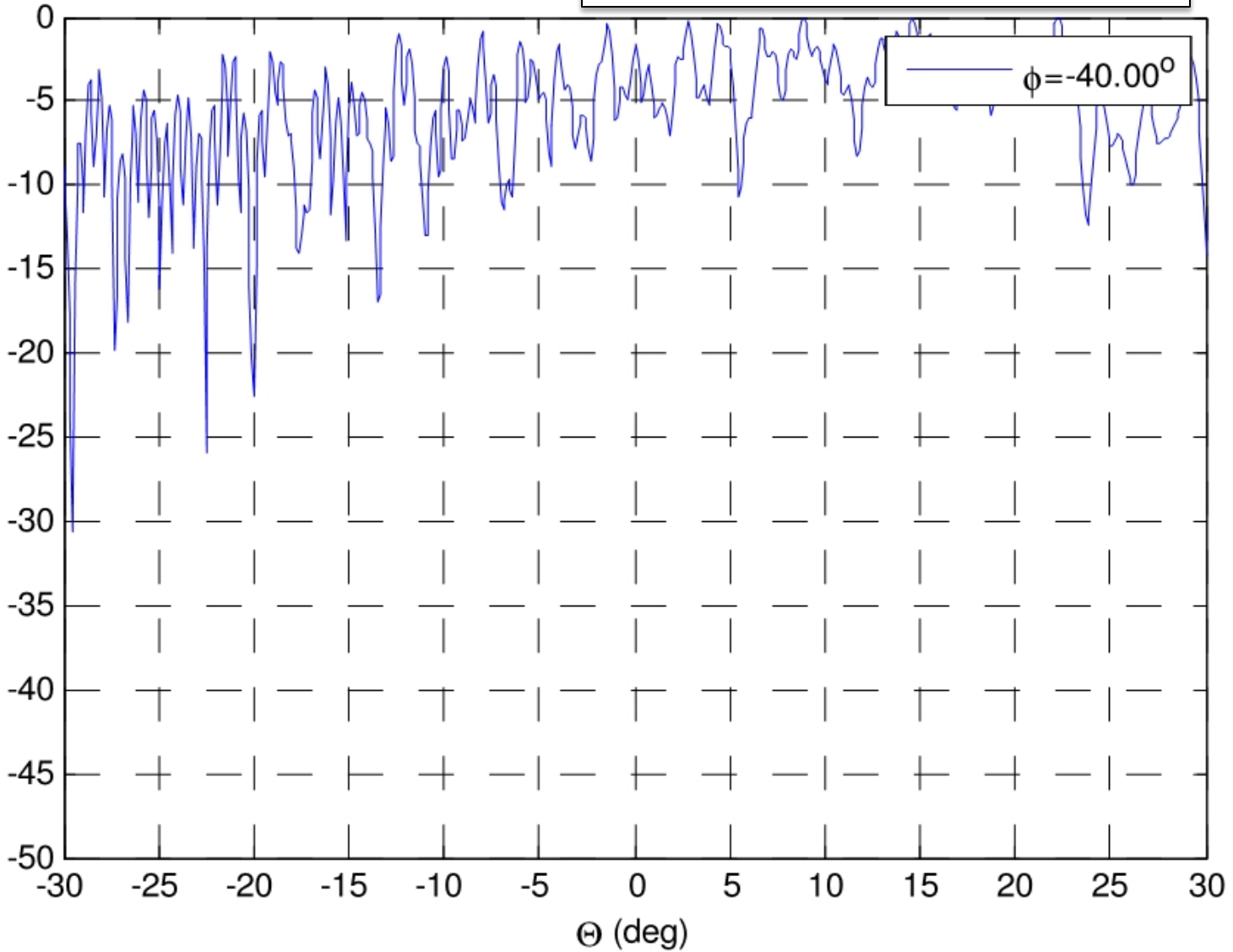


Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp--40.cut,

Peak Off-axis Gain = -25.9 dBi

Off-axis Gain Below Peak (dBi)

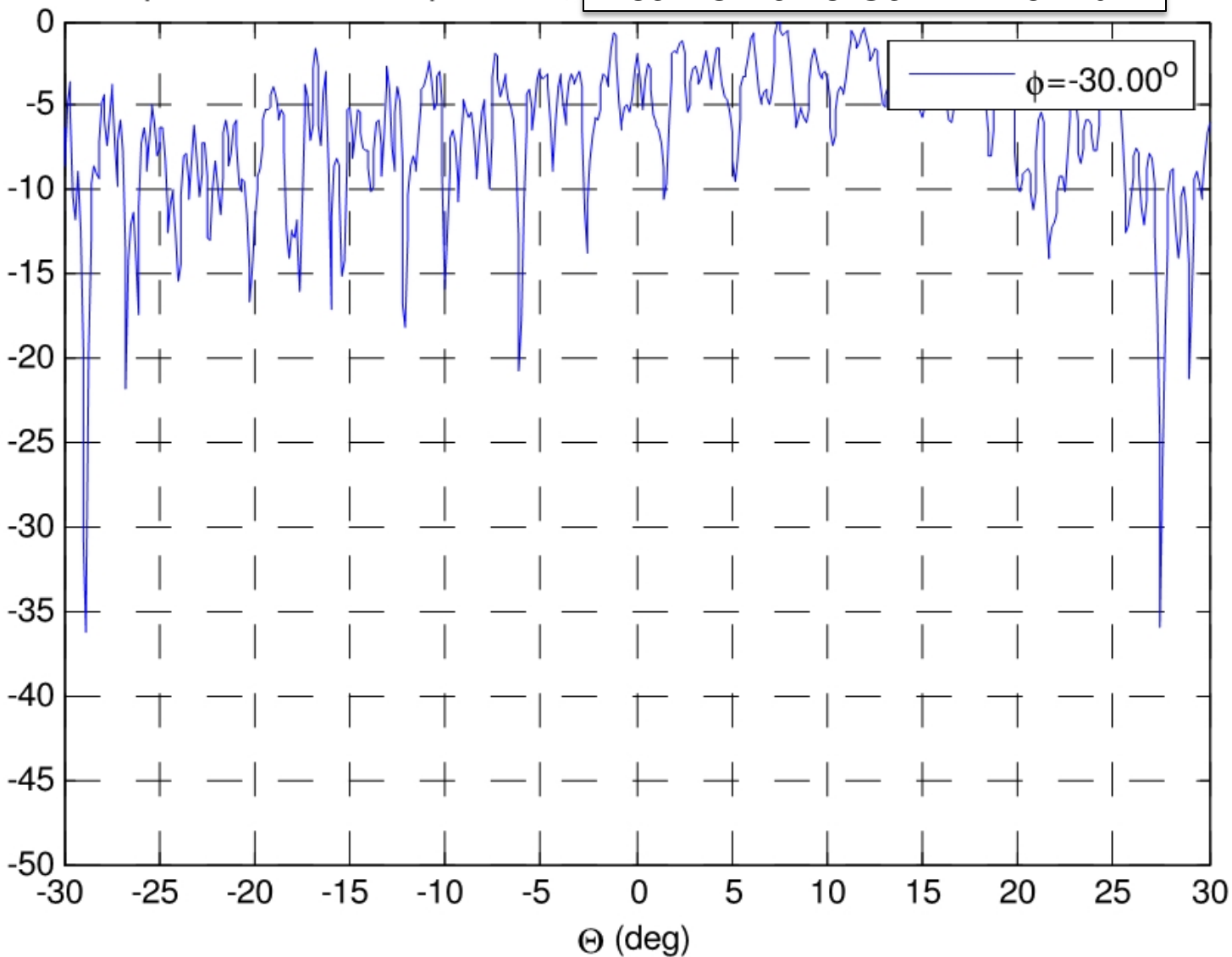


Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp--30.cut,

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

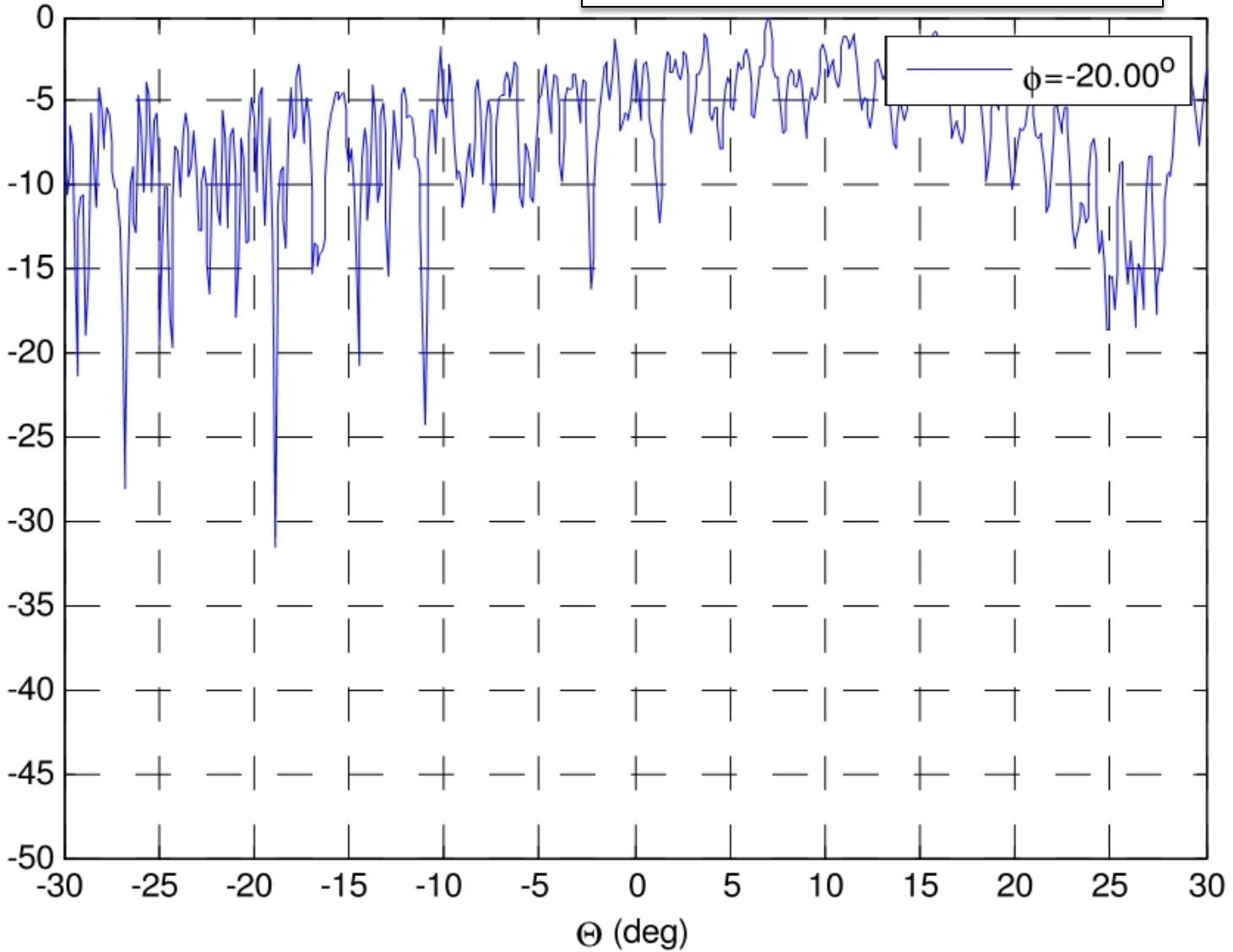


Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp--20.cut,

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

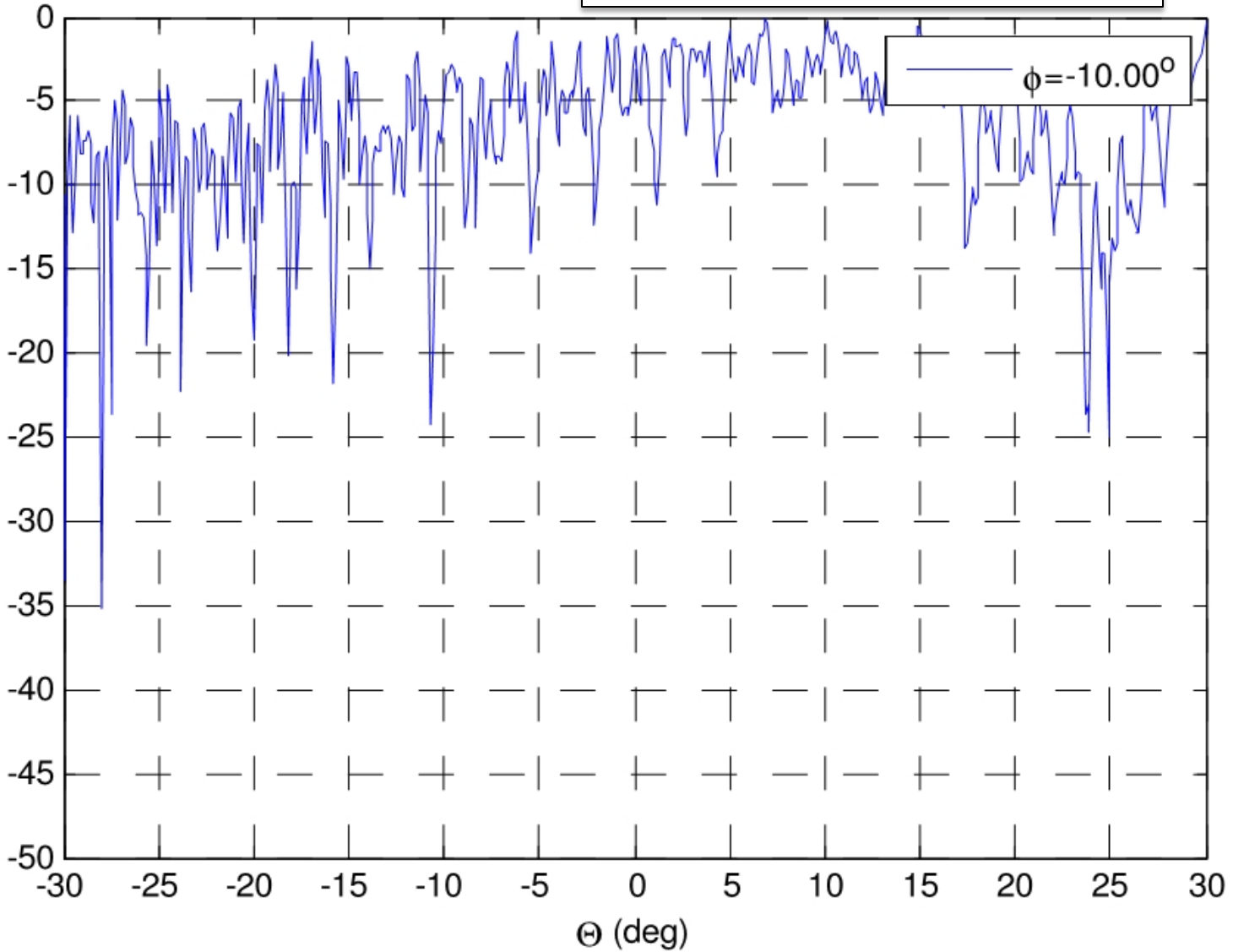


Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp--10.cut,

Peak Off-axis Gain = -25.8 dBi

Off-axis Gain Below Peak (dBi)

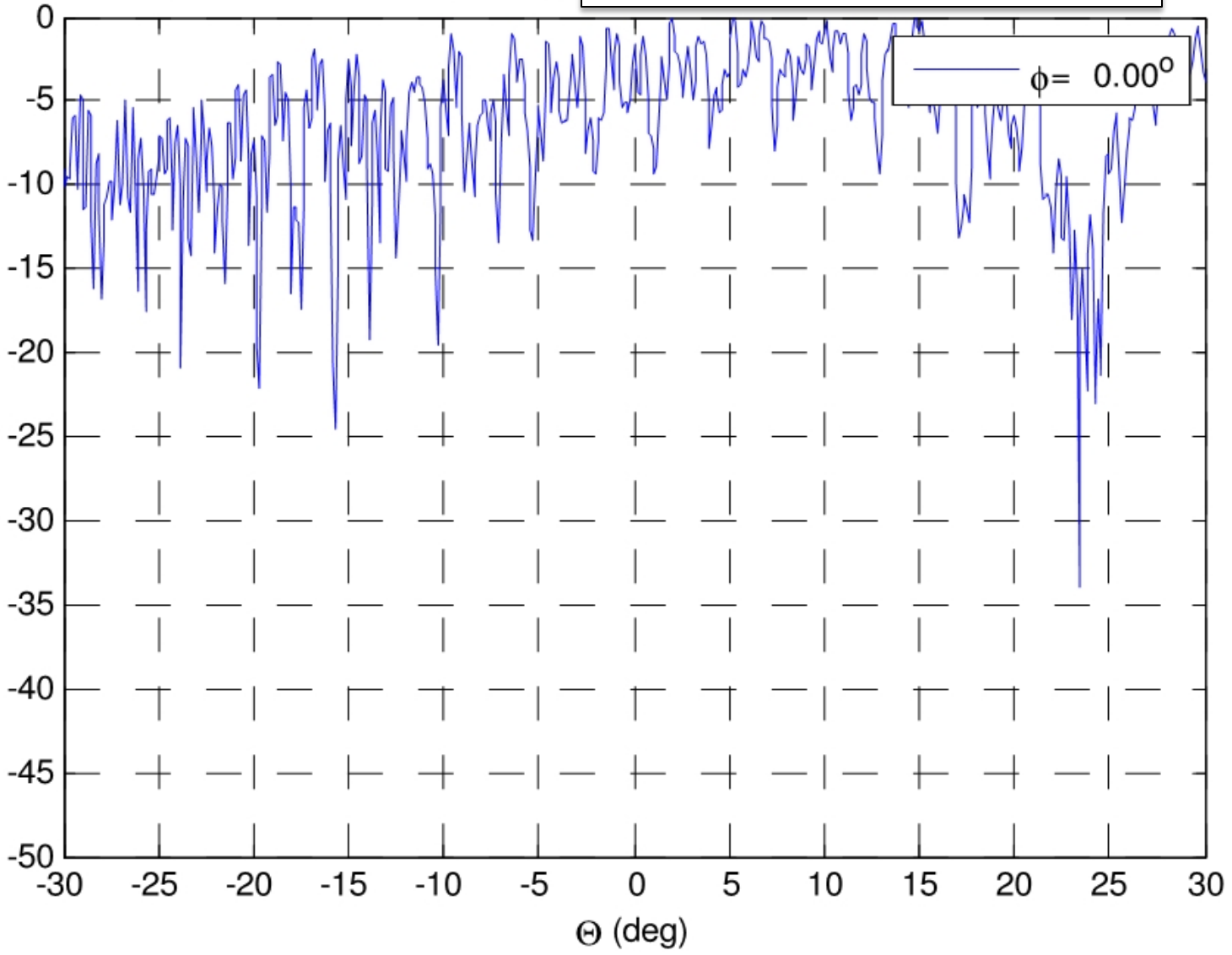


Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp-0.cut, F

Peak Off-axis Gain = -26.0 dBi

Off-axis Gain Below Peak (dBi)

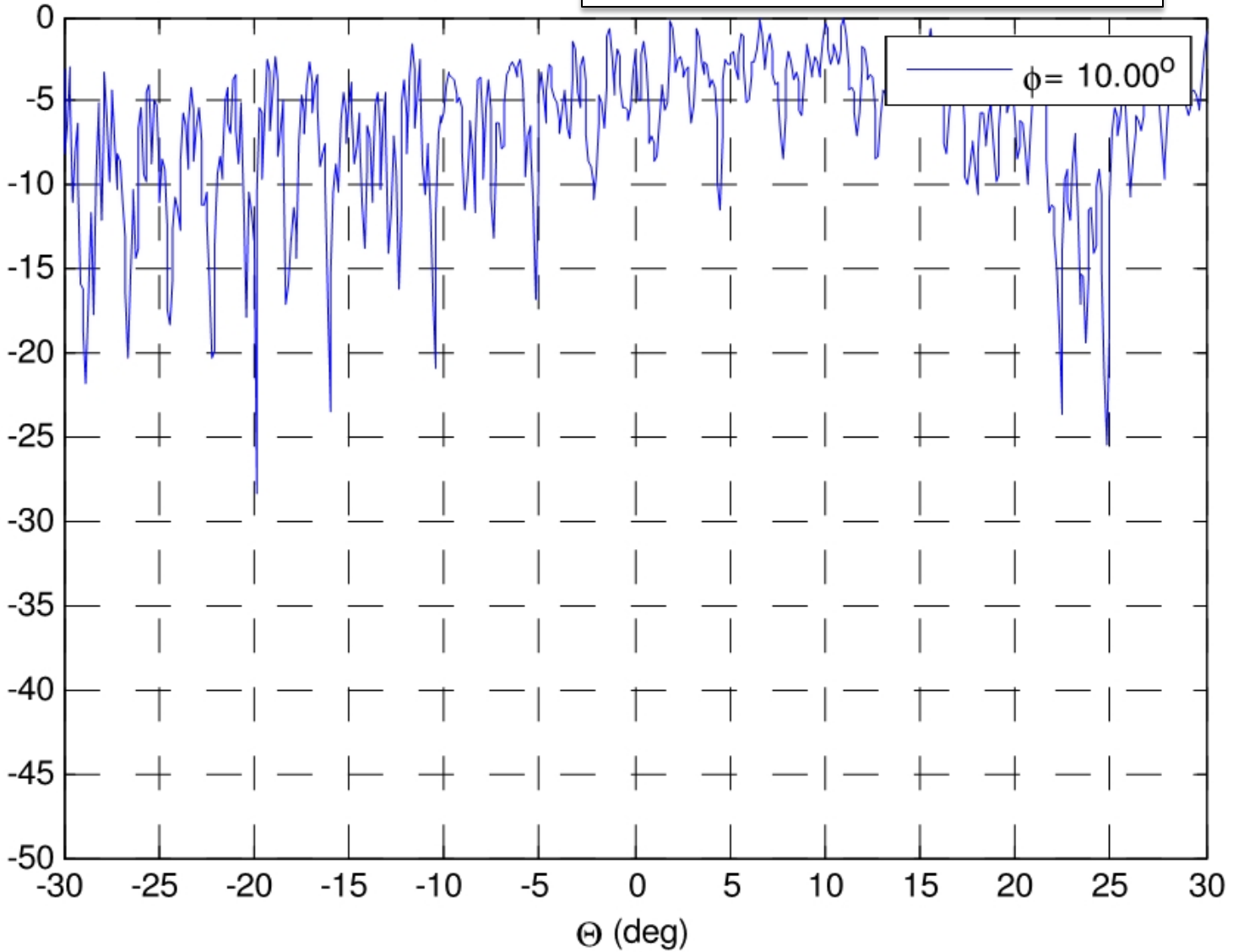


Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp-10.cut,

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

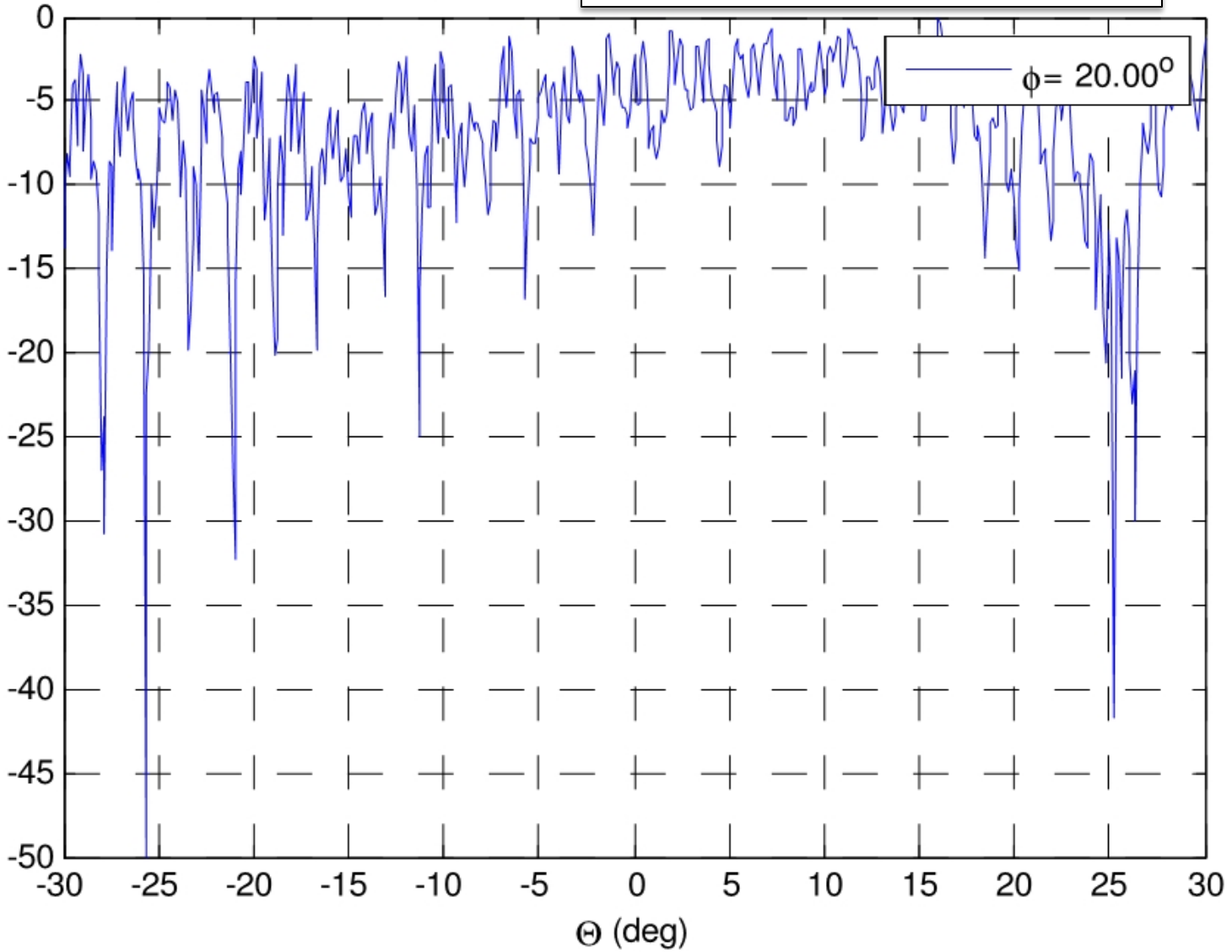


Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp-20.cut,

Peak Off-axis Gain = -25.4 dBi

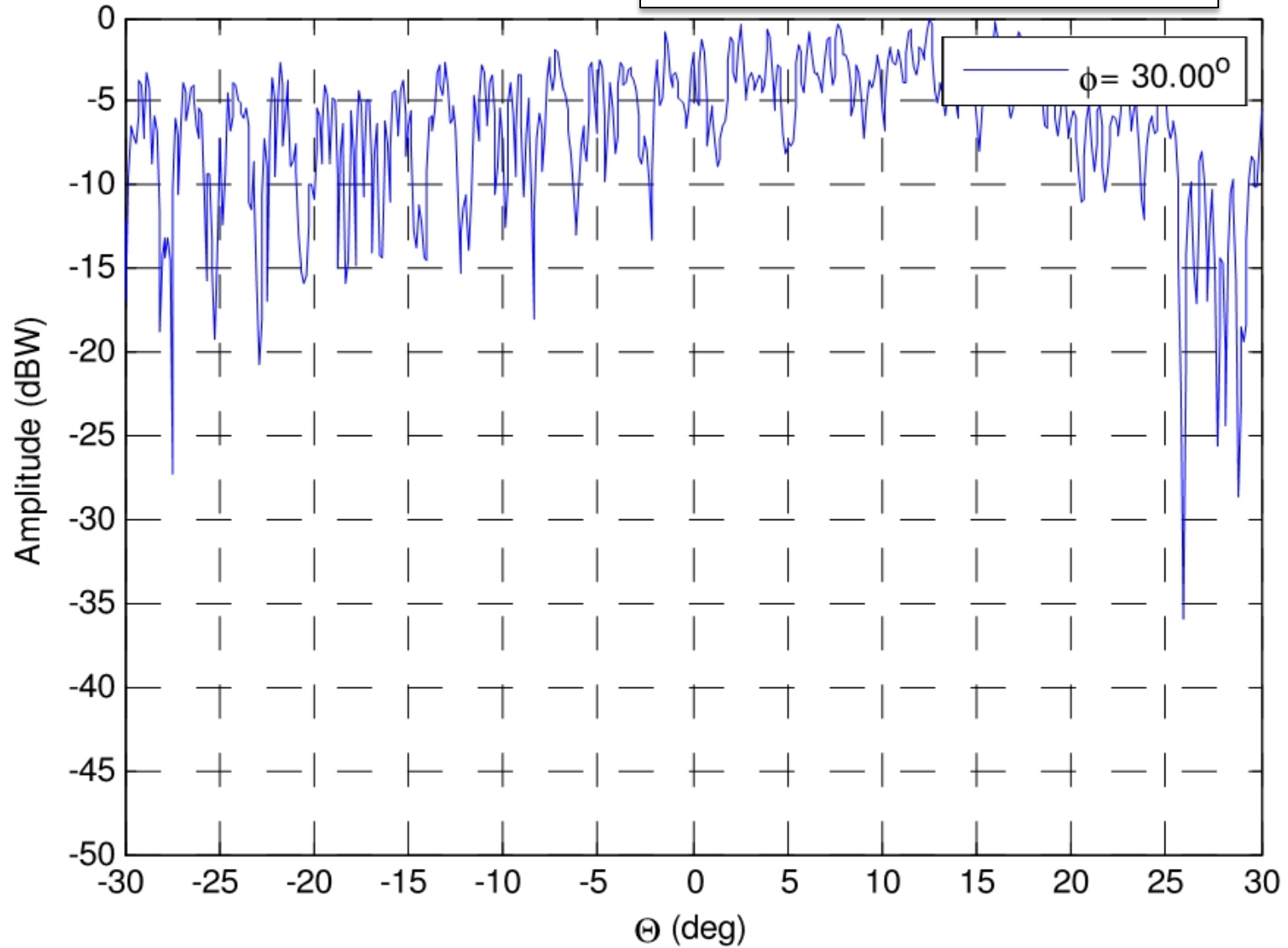
Off-axis Gain Below Peak (dBi)



Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp-30.cut,

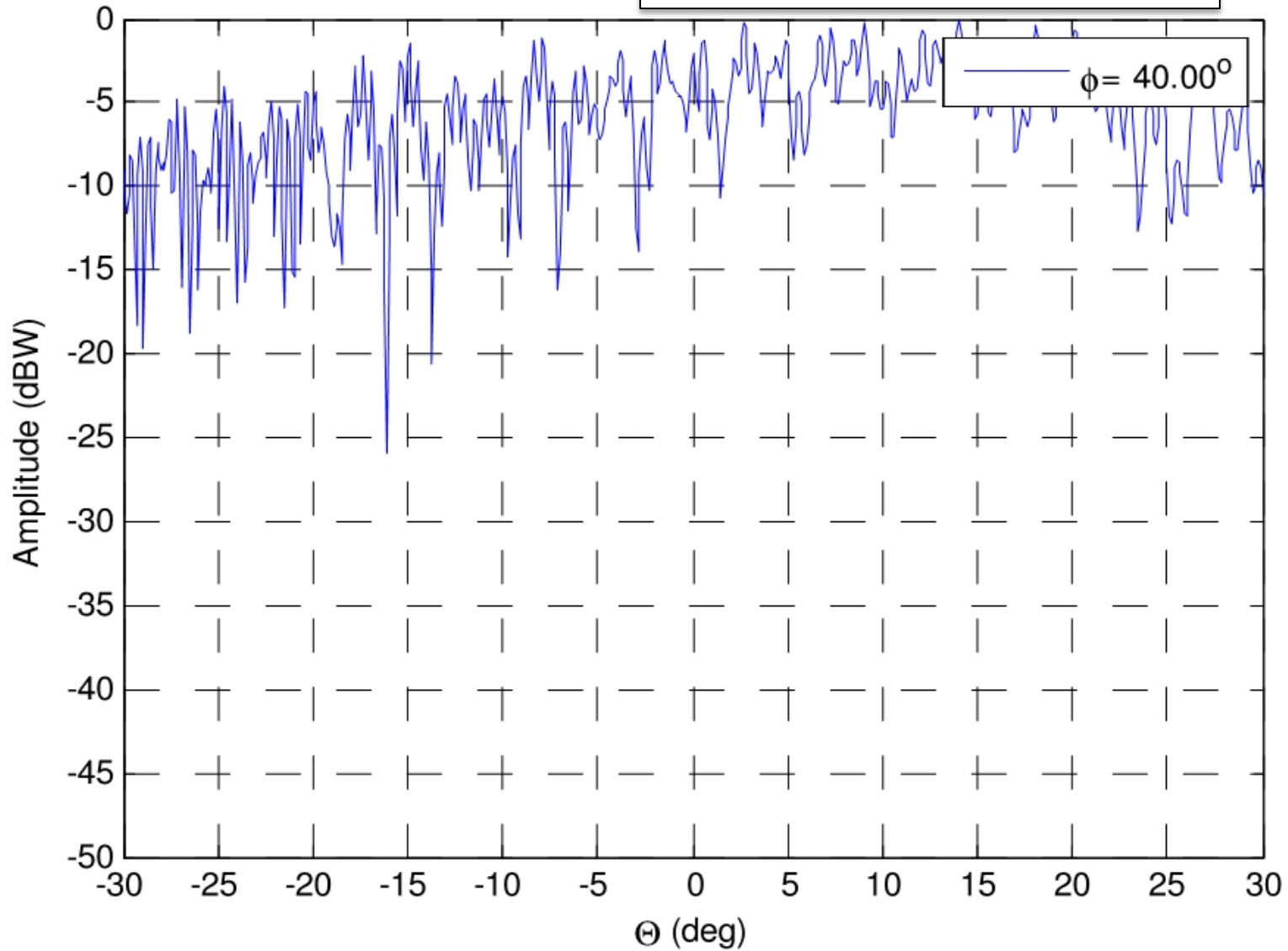
Peak Off-axis Gain = -25.6 dBi



Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp-40.cut,

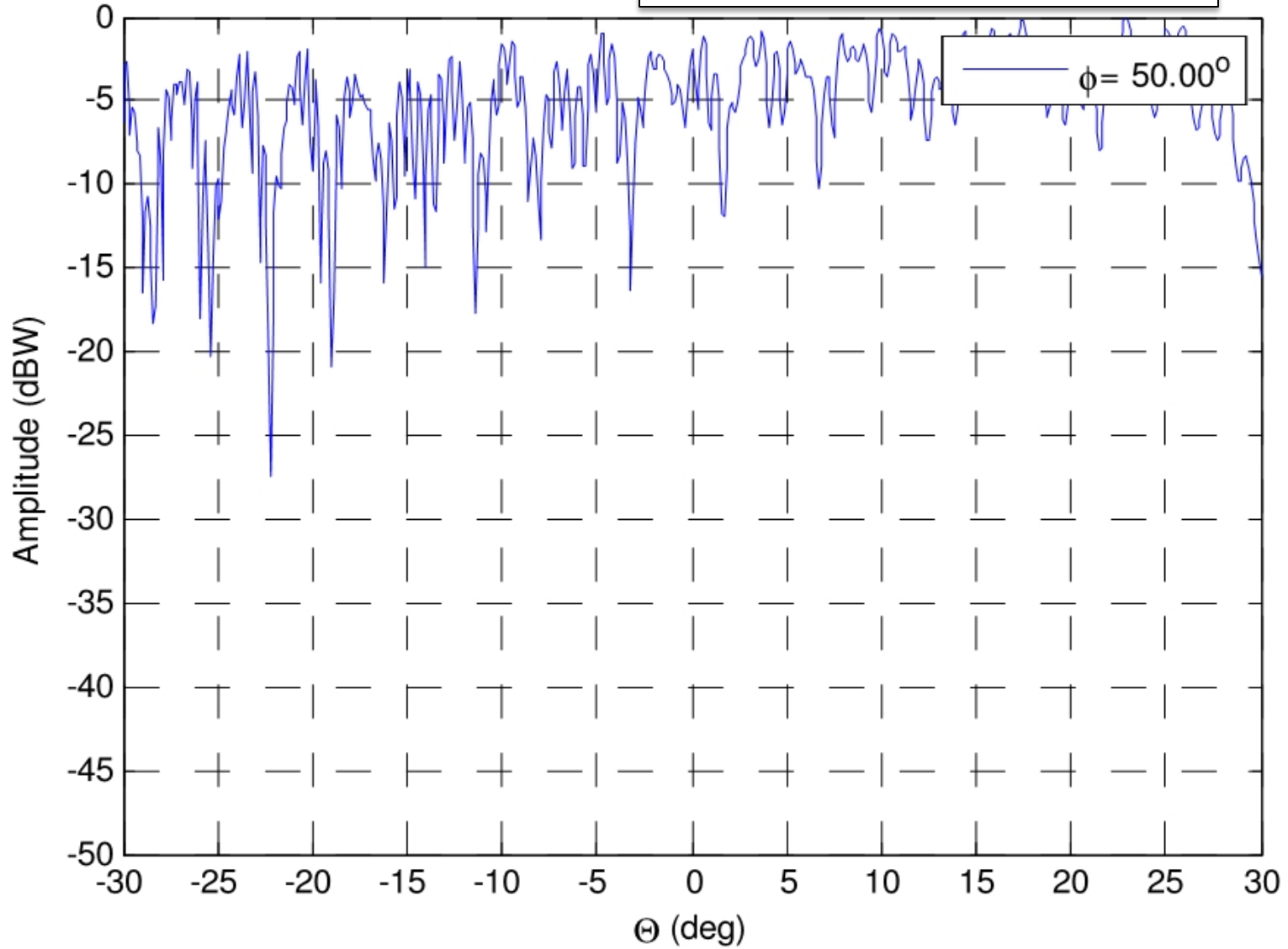
Peak Off-axis Gain = -25.3 dBi



Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp-50.cut,

Peak Off-axis Gain = -25.7 dBi

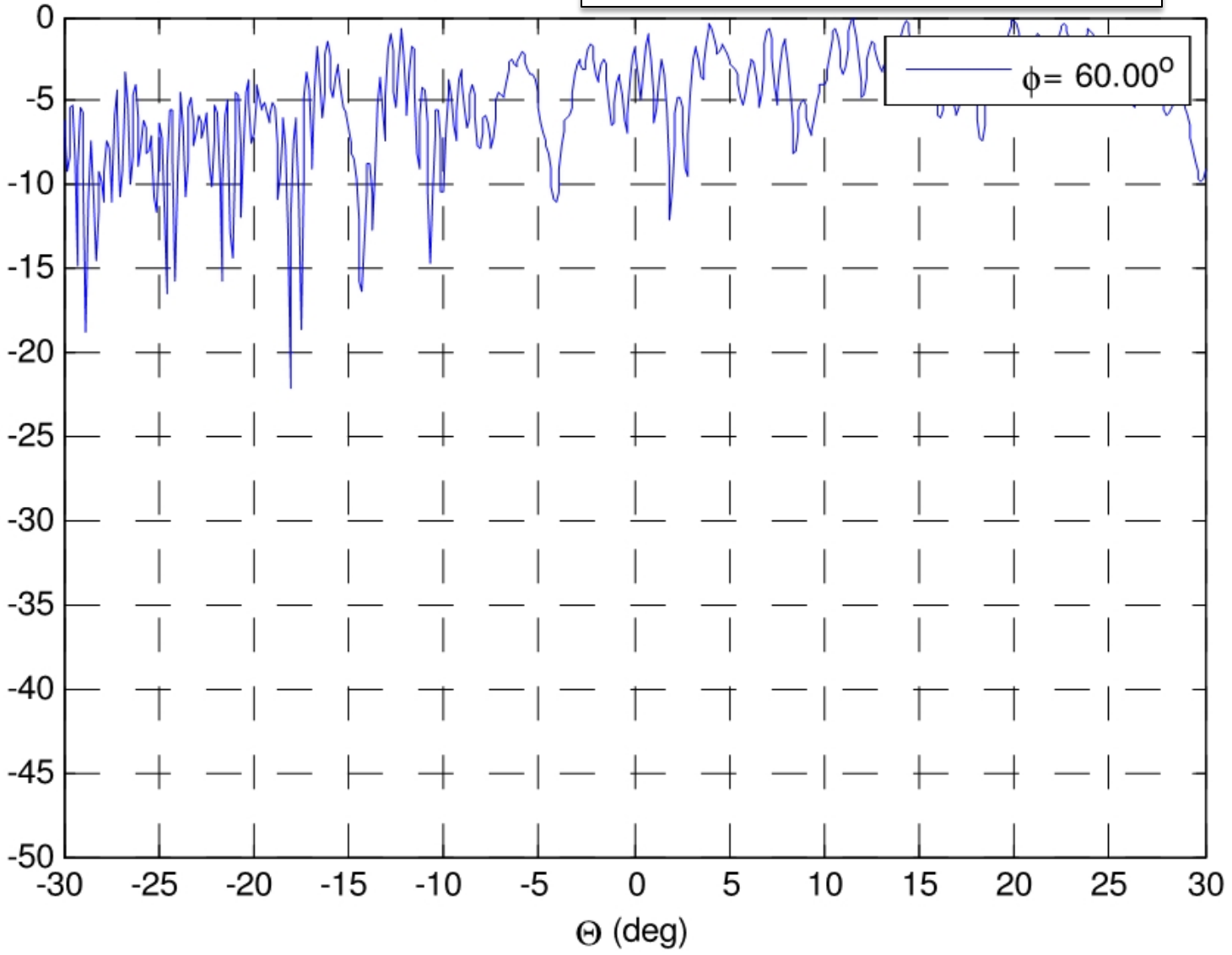


Normalized pattern cuts - farfield

Input file: tx-17.3-rhcp-60.cut,

Peak Off-axis Gain = -25.9 dBi

Off-axis Gain Below Peak (dBi)



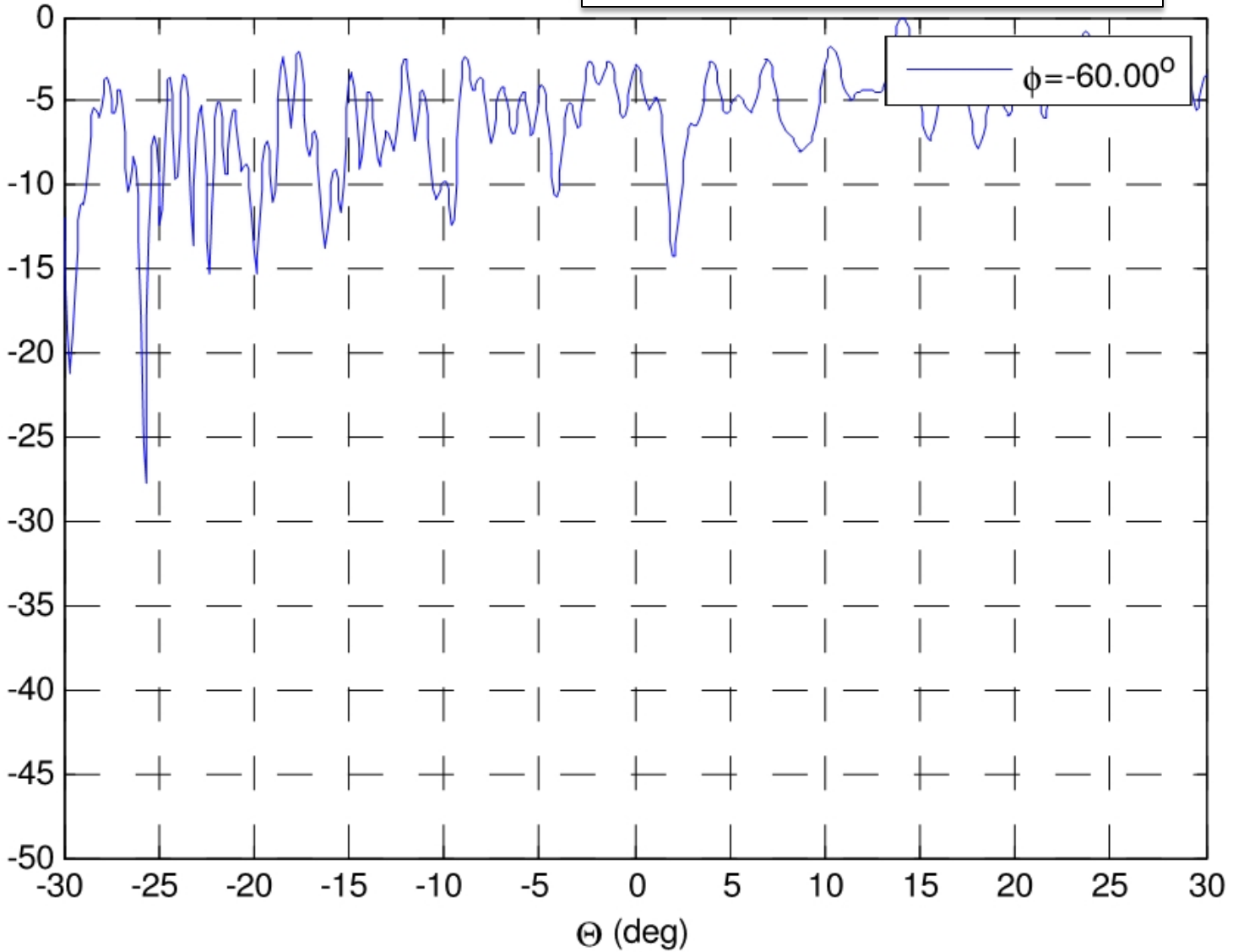
LHCP = 17.305 GHz

Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp--60.cut,

Peak Off-axis Gain = -24.9 dBi

Off-axis Gain Below Peak (dBi)

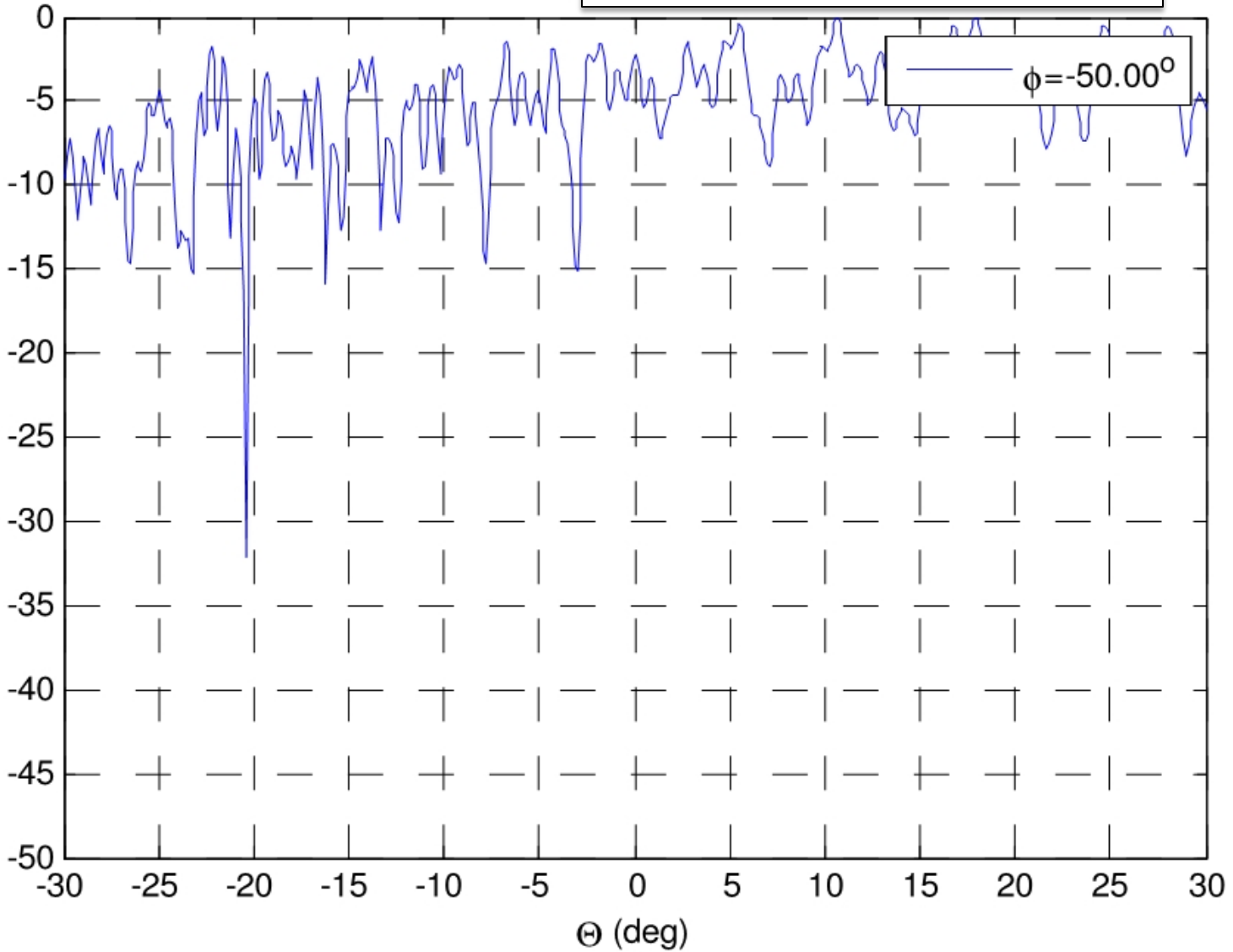


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp--50.cut,

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

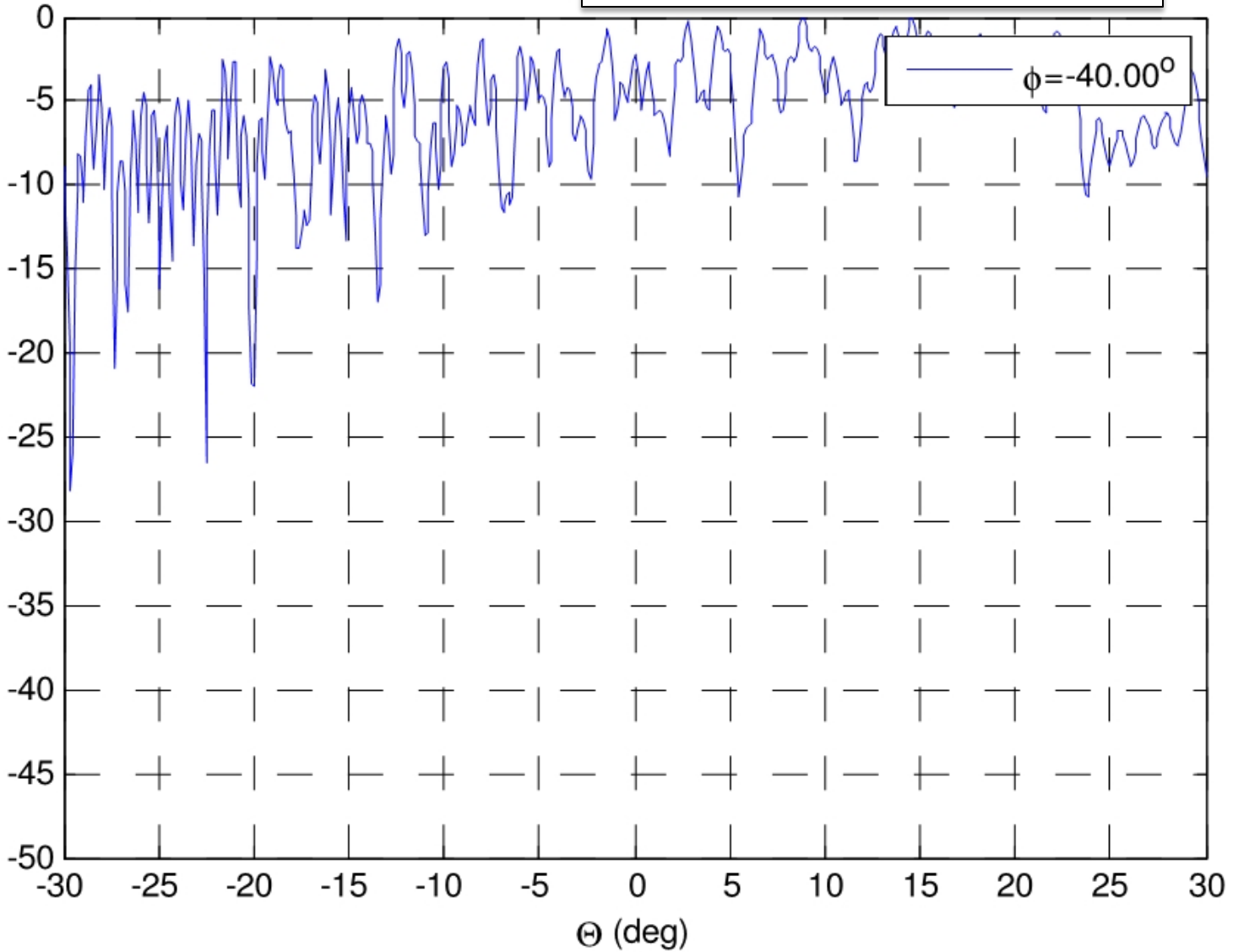


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp--40.cut,

Peak Off-axis Gain = -26.4 dBi

Off-axis Gain Below Peak (dBi)

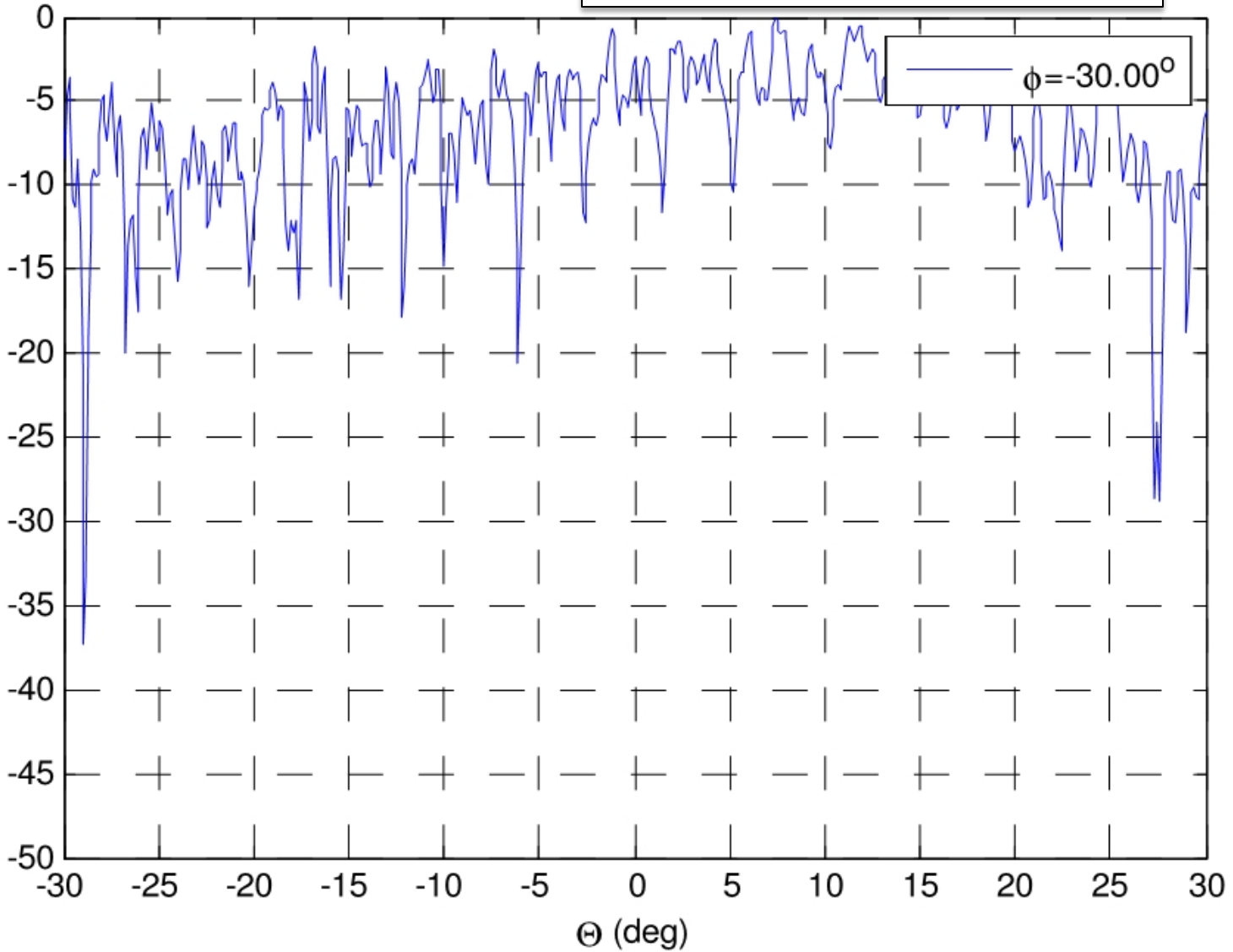


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp--30.cut,

Peak Off-axis Gain = -25.6 dBi

Off-axis Gain Below Peak (dBi)

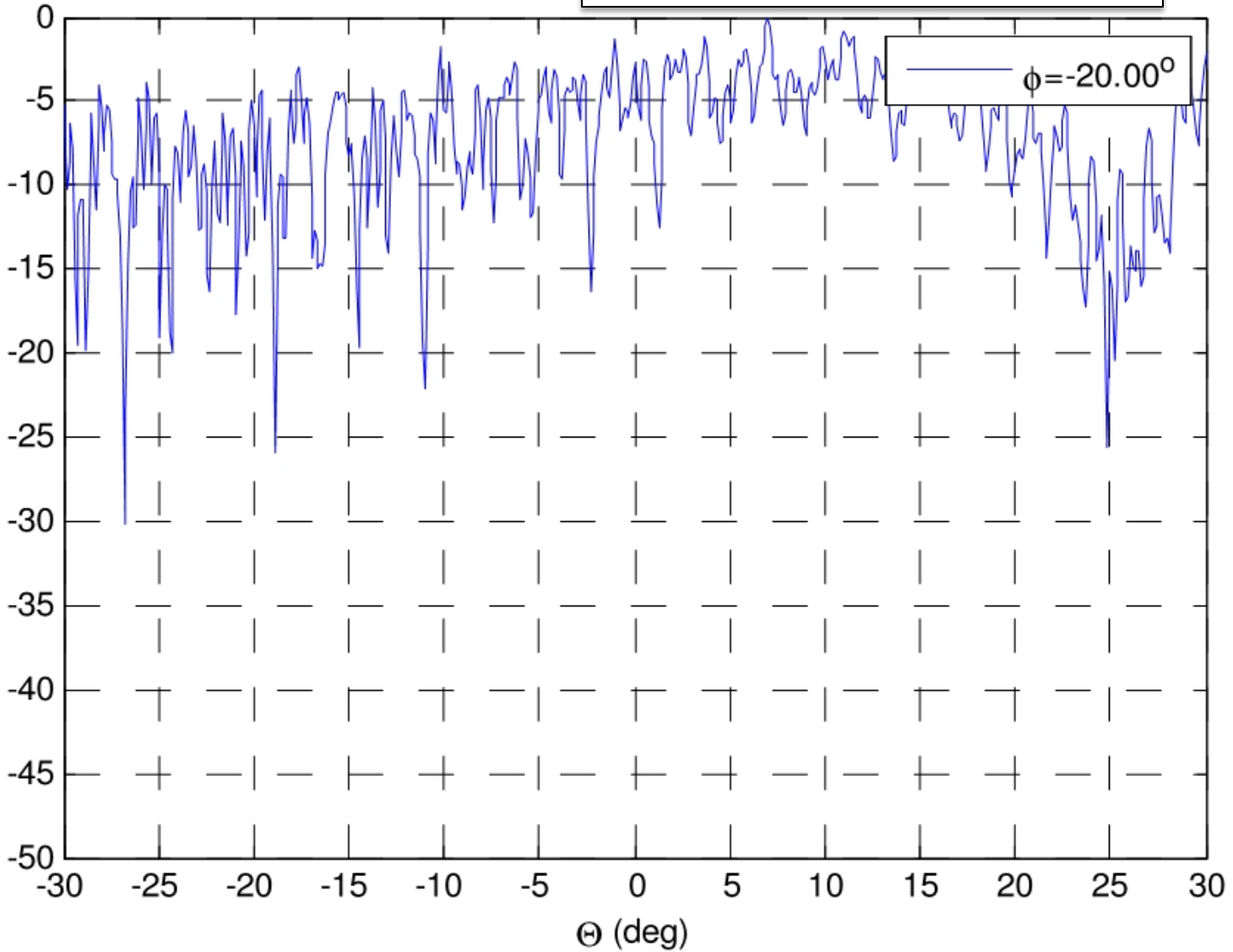


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp--20.cut,

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

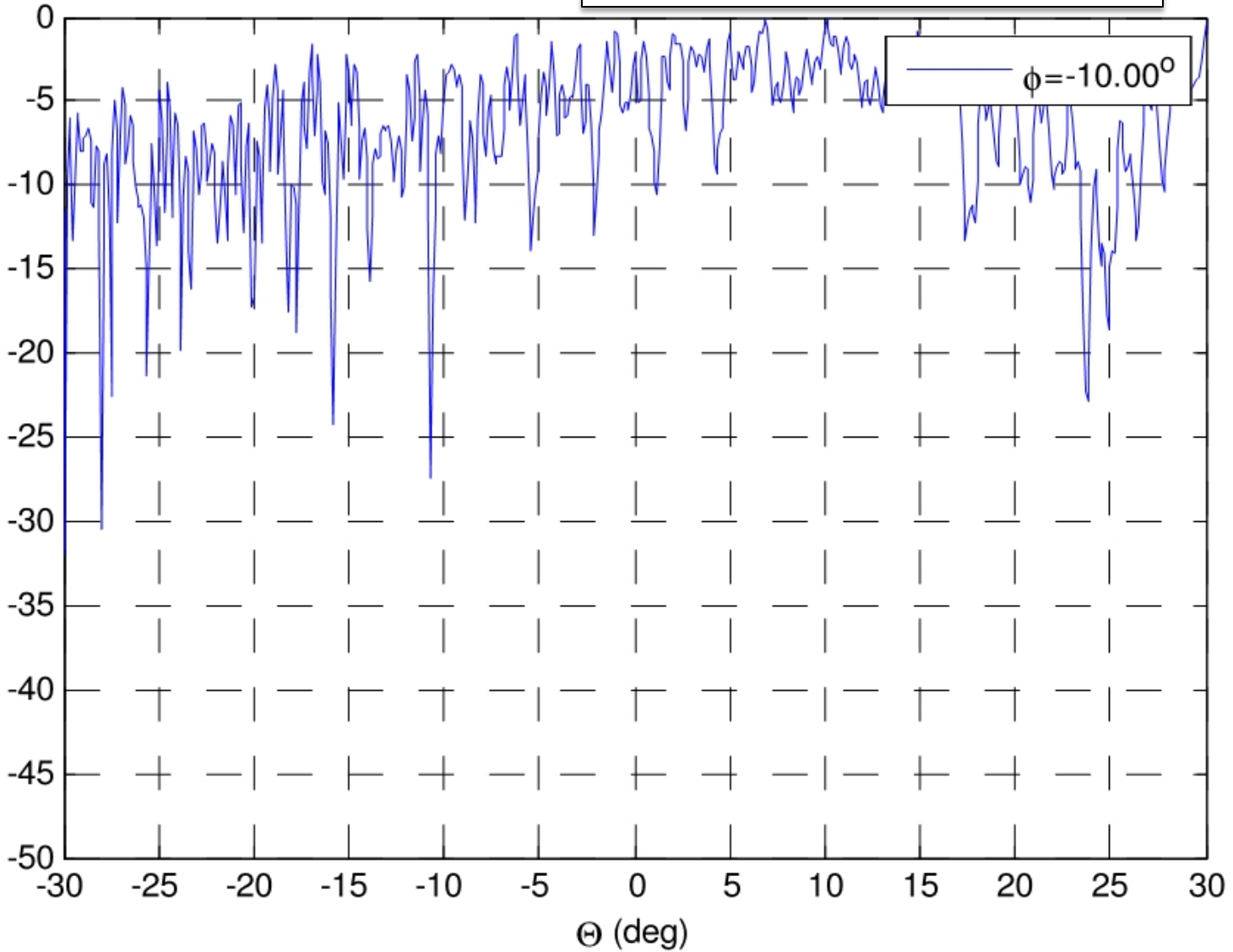


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp--10.cut,

Peak Off-axis Gain = -25.8 dBi

Off-axis Gain Below Peak (dBi)

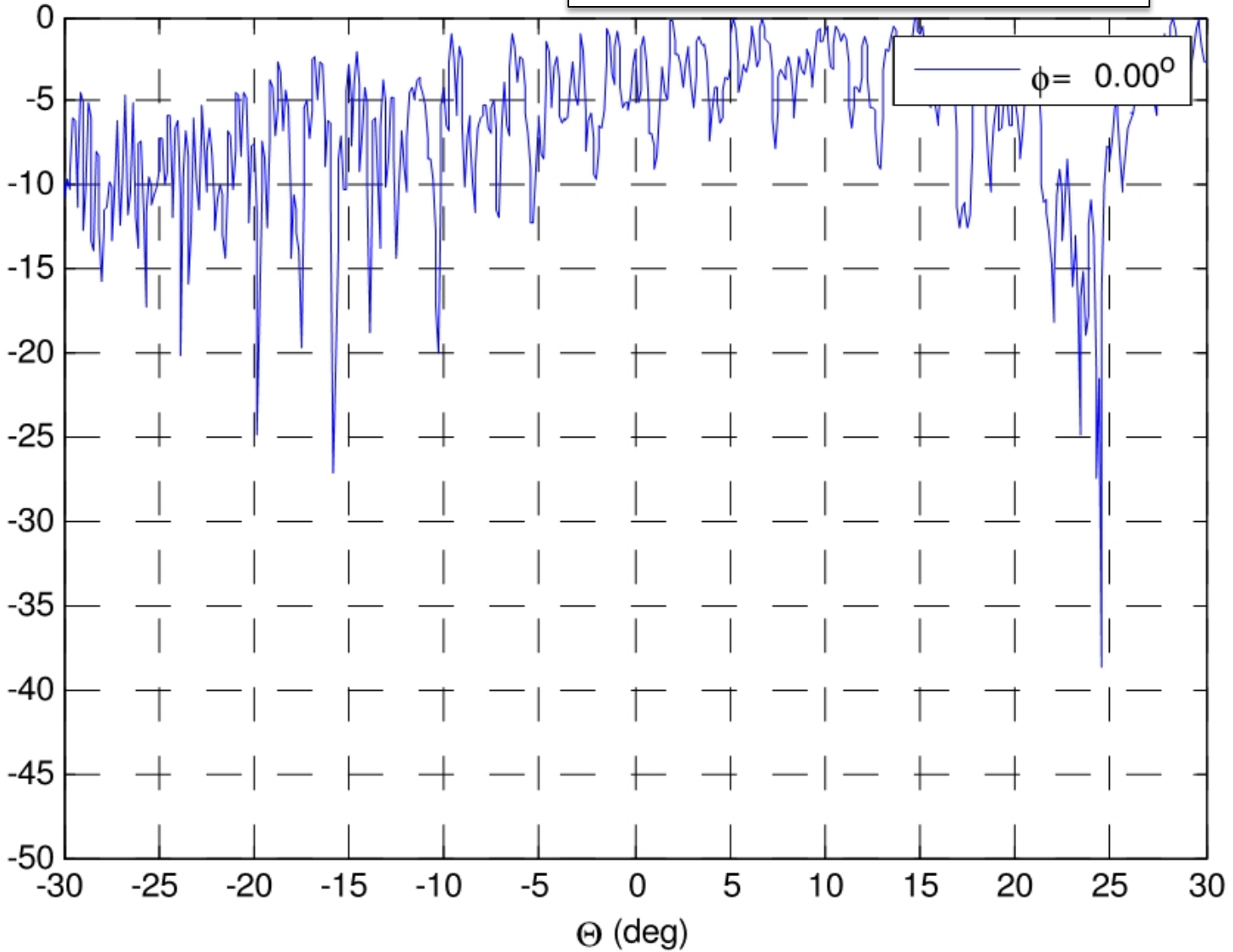


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp-0.cut,

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

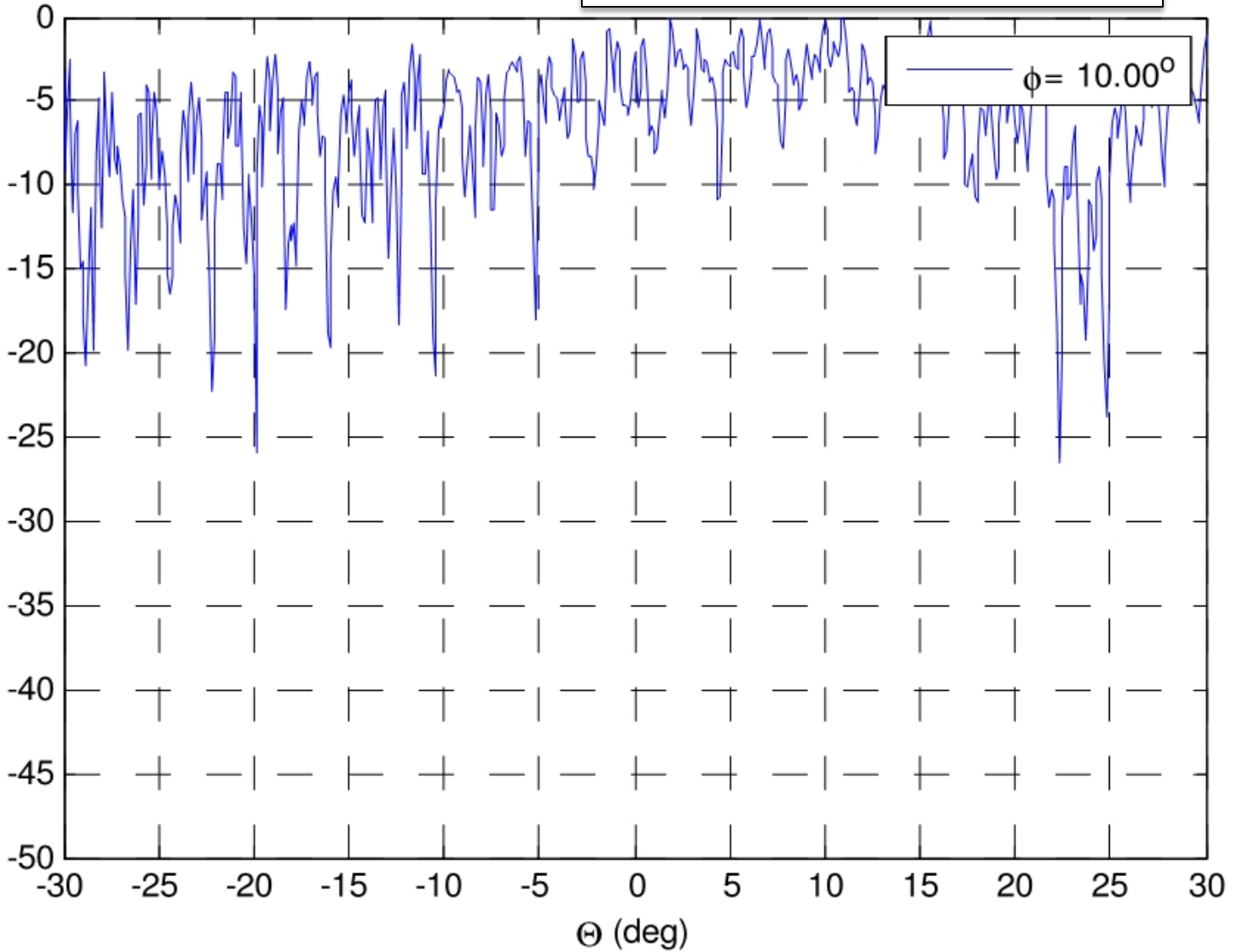


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp-10.cut,

Peak Off-axis Gain = -25.9 dBi

Off-axis Gain Below Peak (dBi)

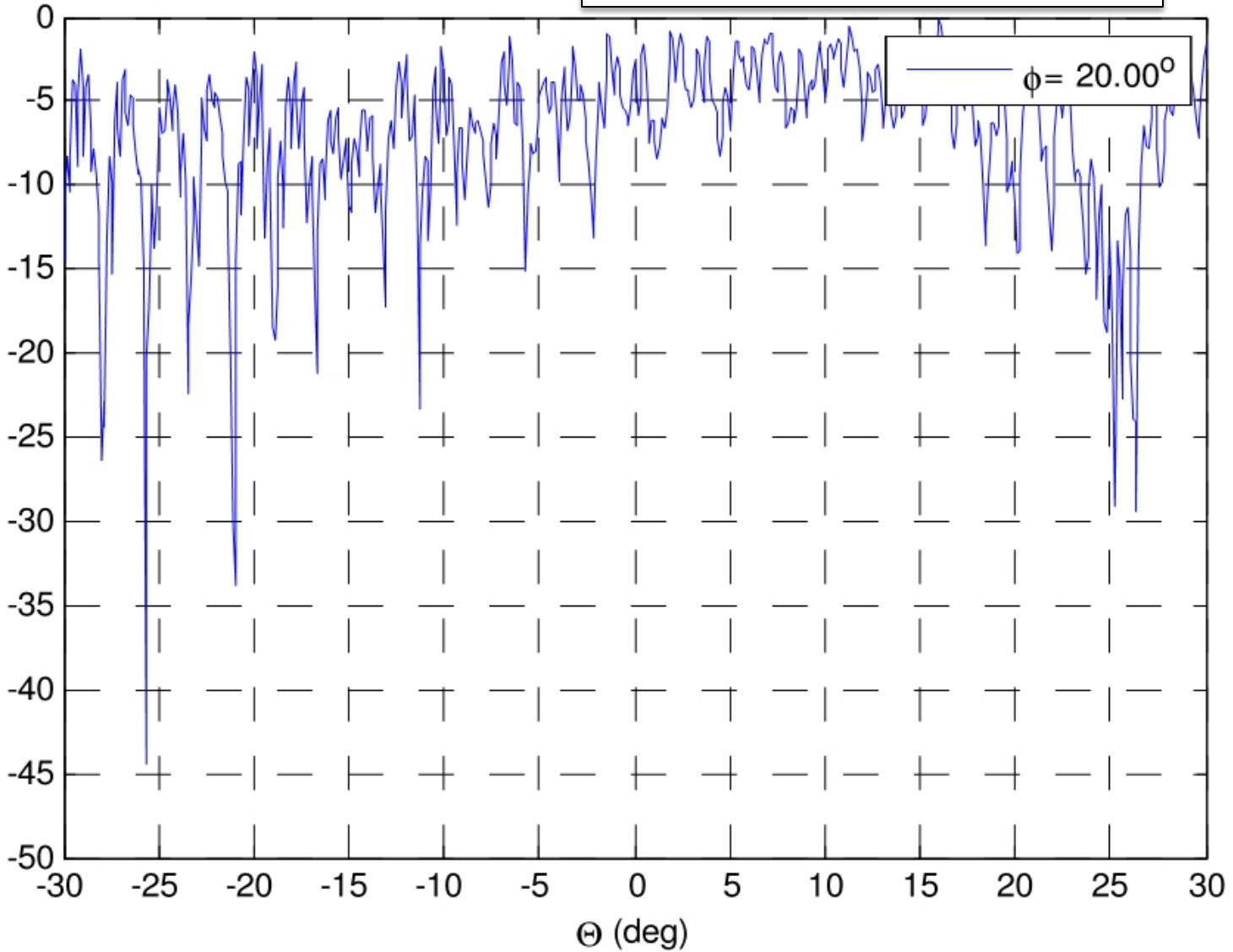


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp-20.cut,

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

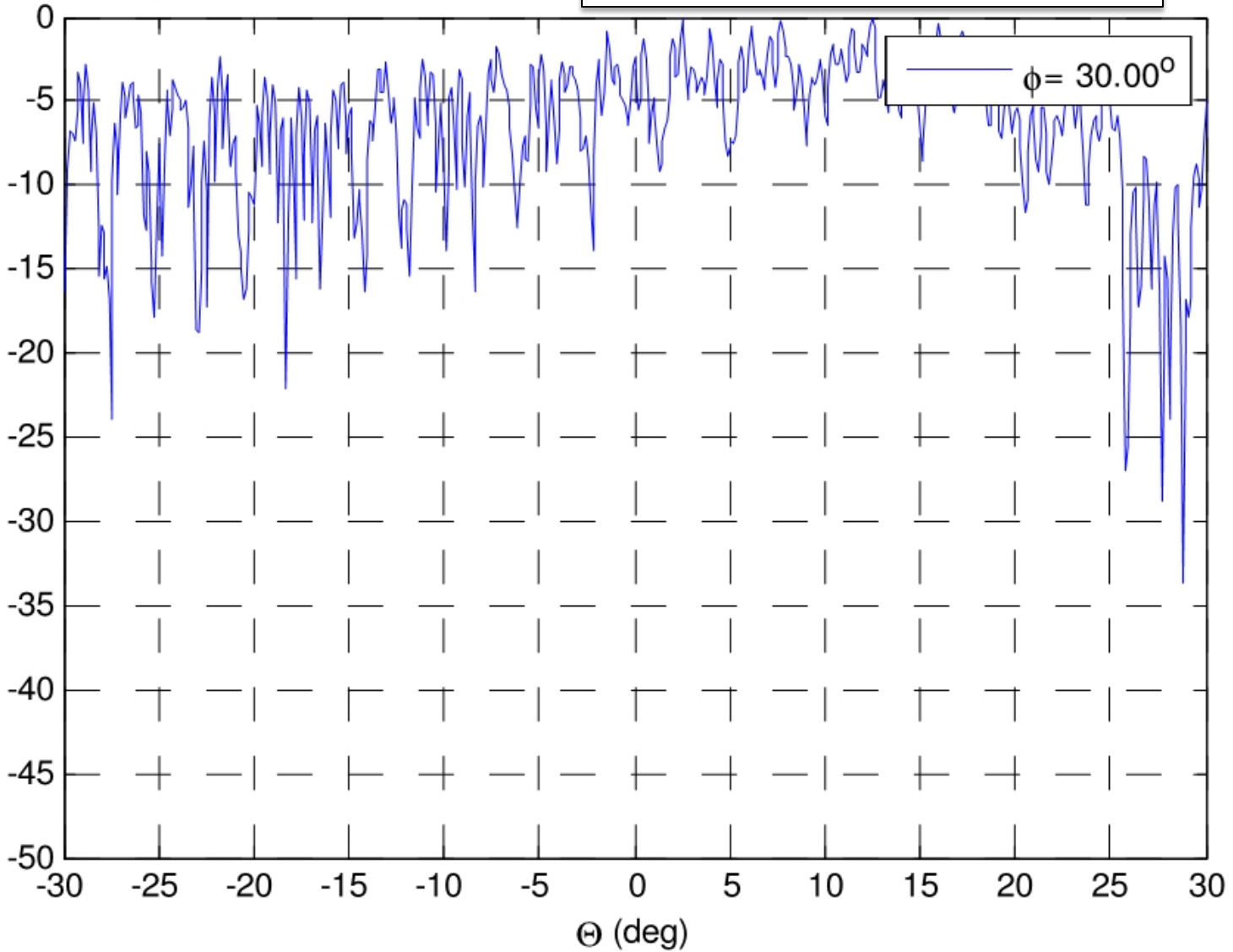


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp-30.cut,

Peak Off-axis Gain = -25.6 dBi

Off-axis Gain Below Peak (dBi)

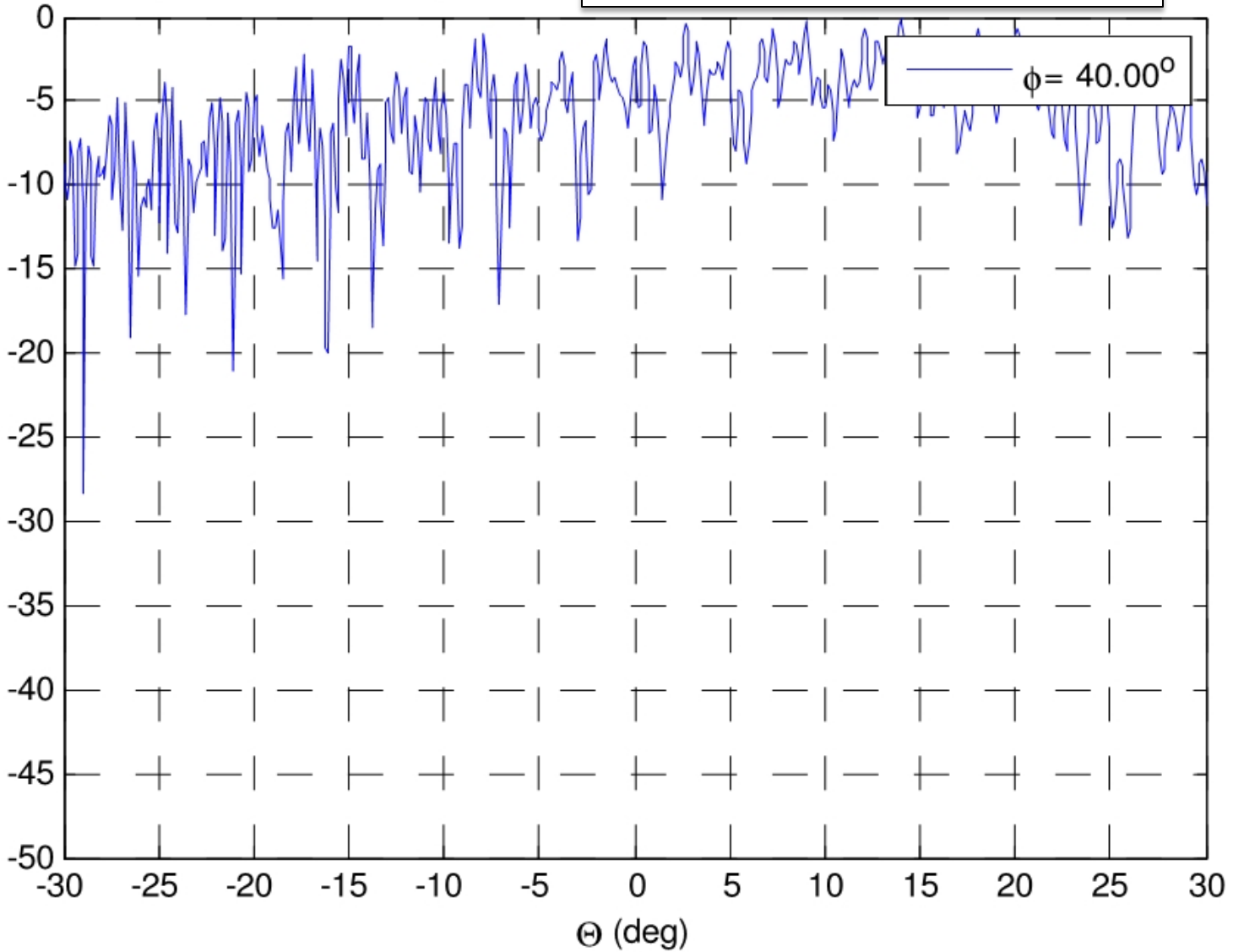


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp-40.cut,

Peak Off-axis Gain = -25.5 dBi

Off-axis Gain Below Peak (dBi)

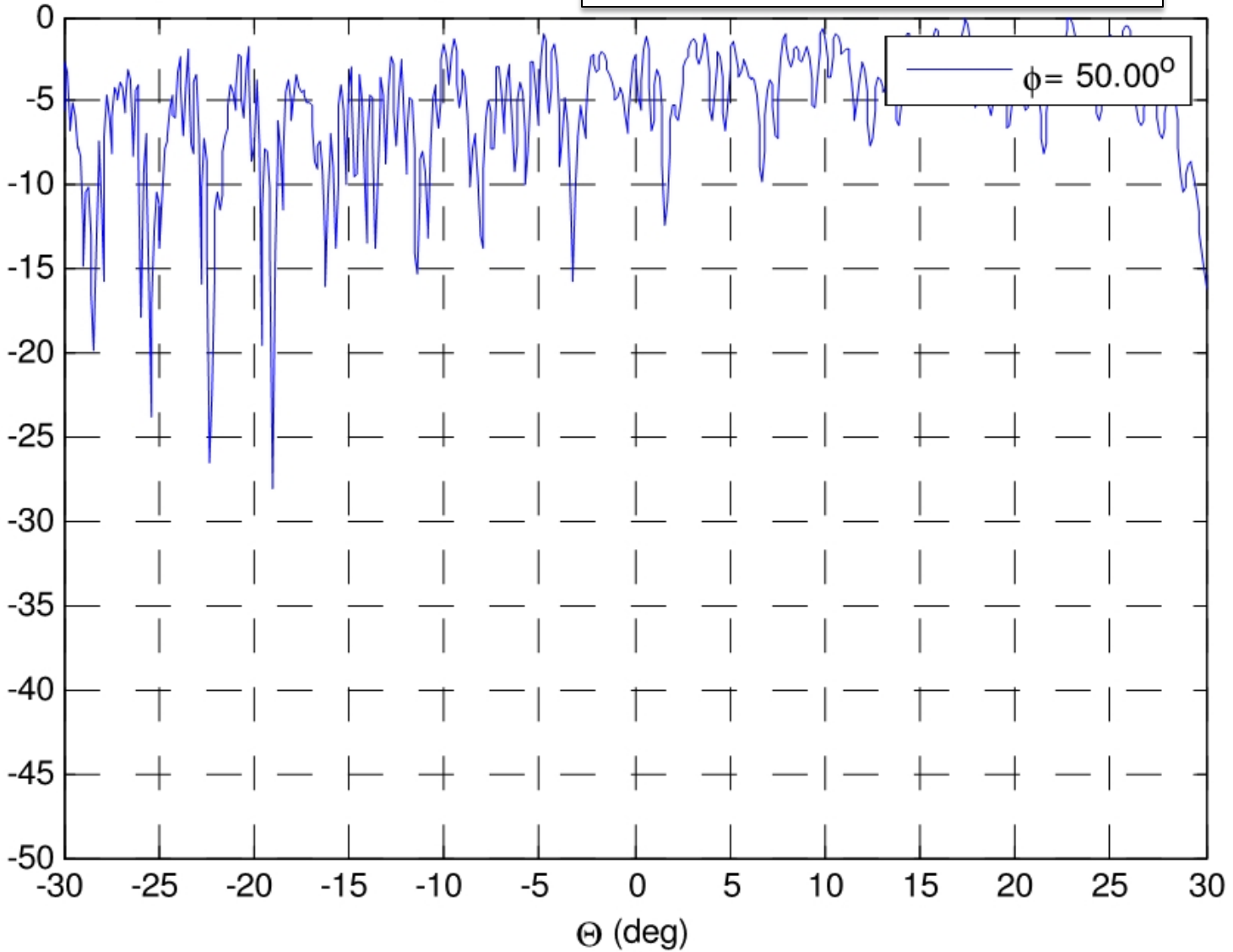


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp-50.cut,

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

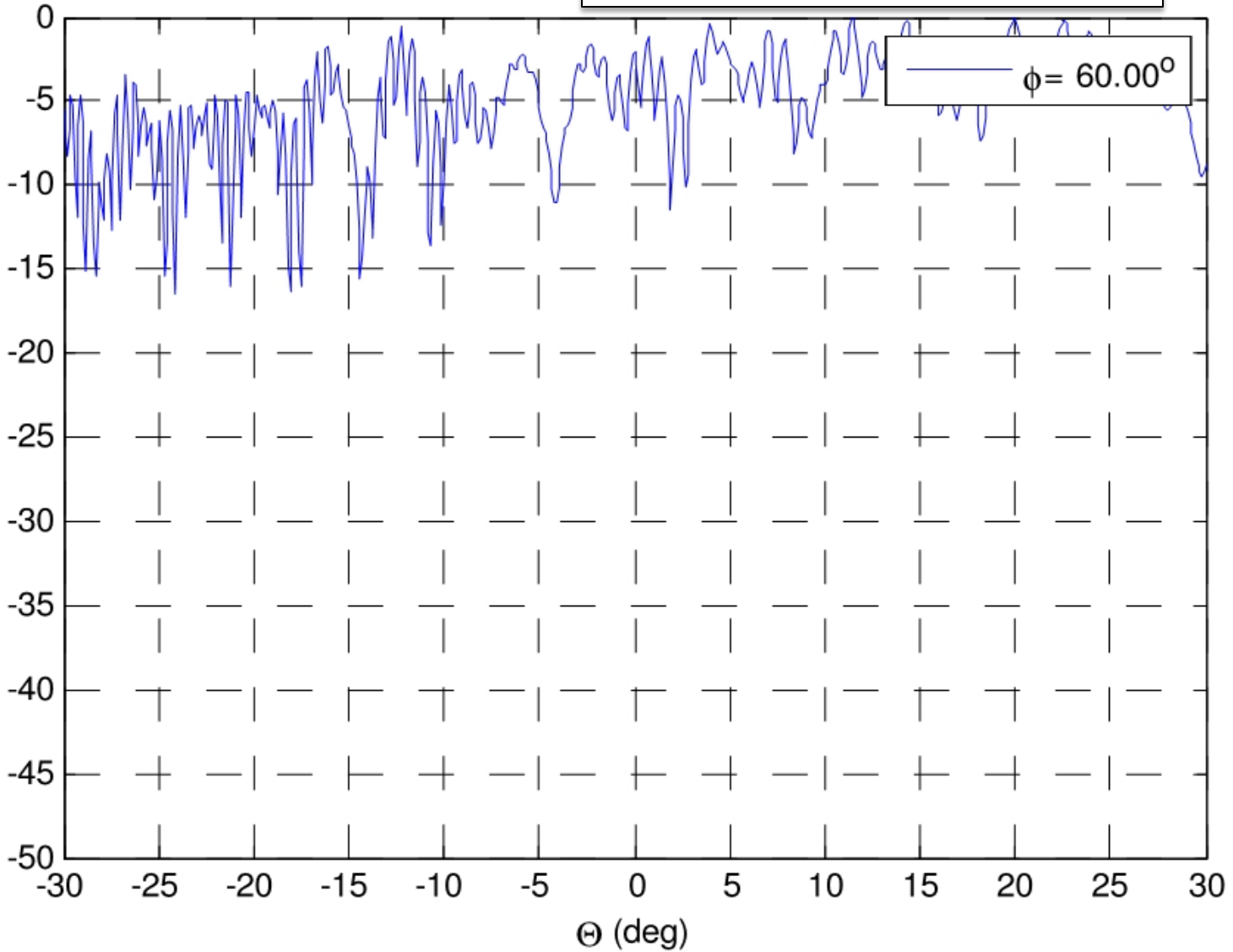


Normalized pattern cuts - farfield

Input file: tx-17.3-lhcp-60.cut,

Peak Off-axis Gain = -25.9 dBi

Off-axis Gain Below Peak (dBi)



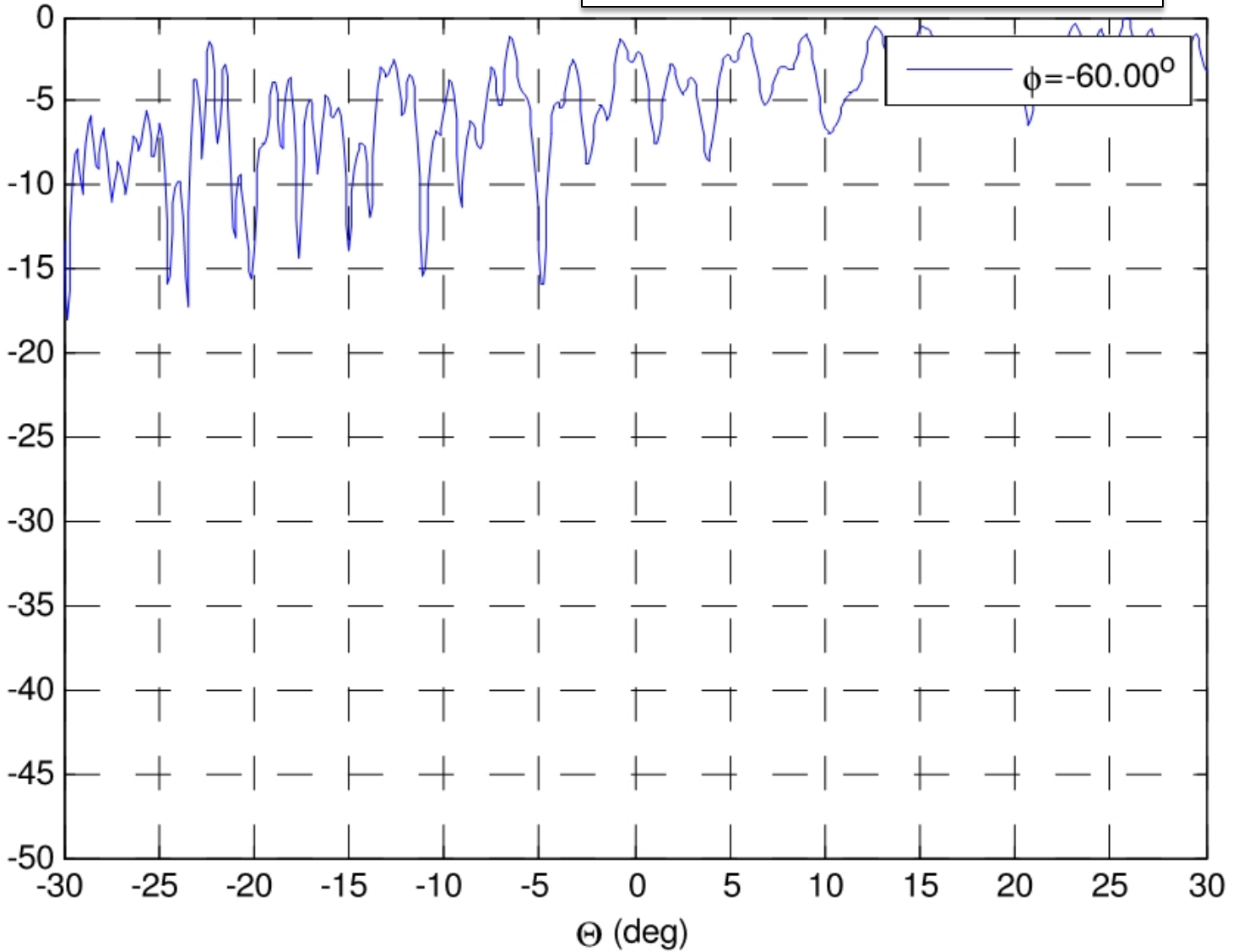
RHCP = 17.5 GHz

Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp--60.cut,

Peak Off-axis Gain = -25.6 dBi

Off-axis Gain Below Peak (dBi)

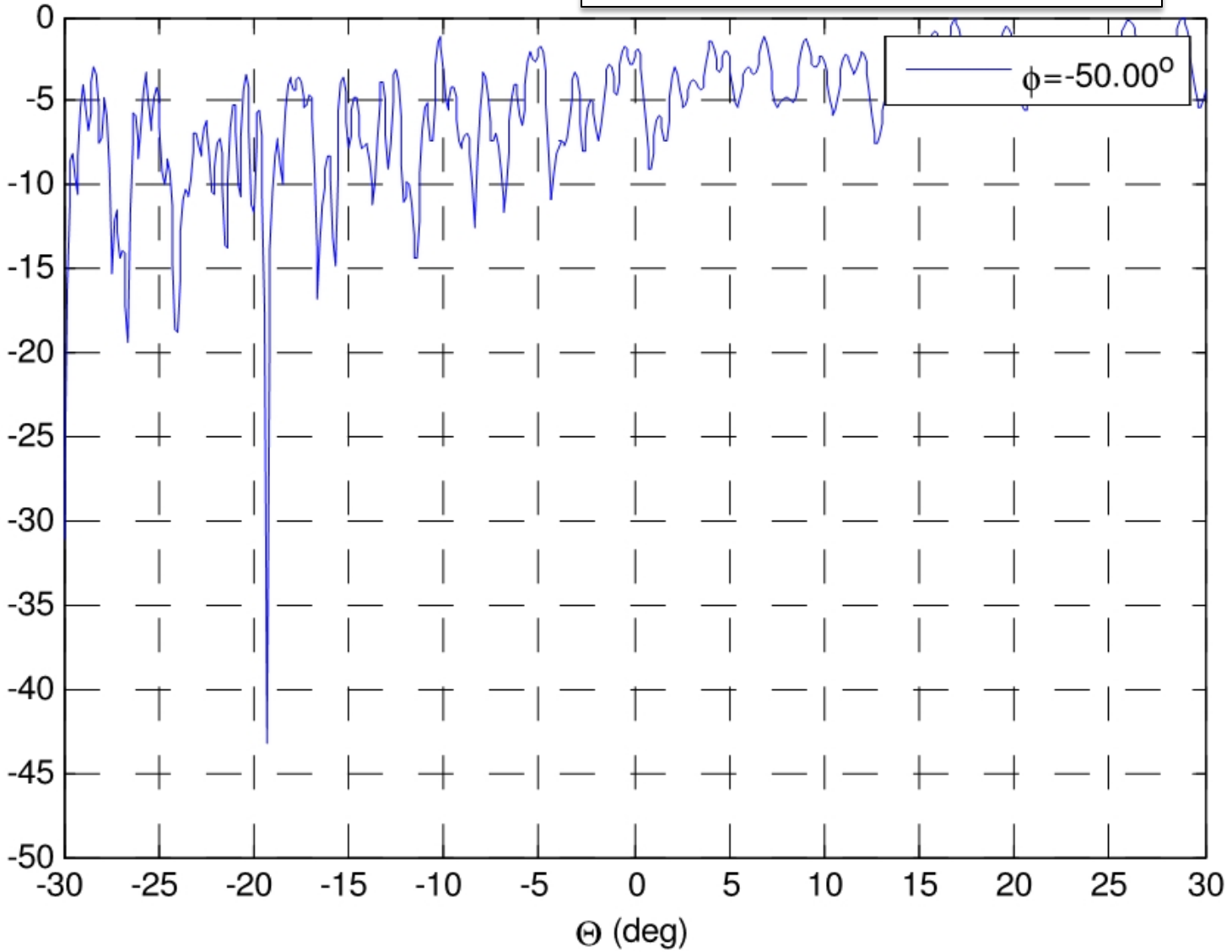


Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp--50.cut,

Peak Off-axis Gain = -25.6 dBi

Off-axis Gain Below Peak (dBi)

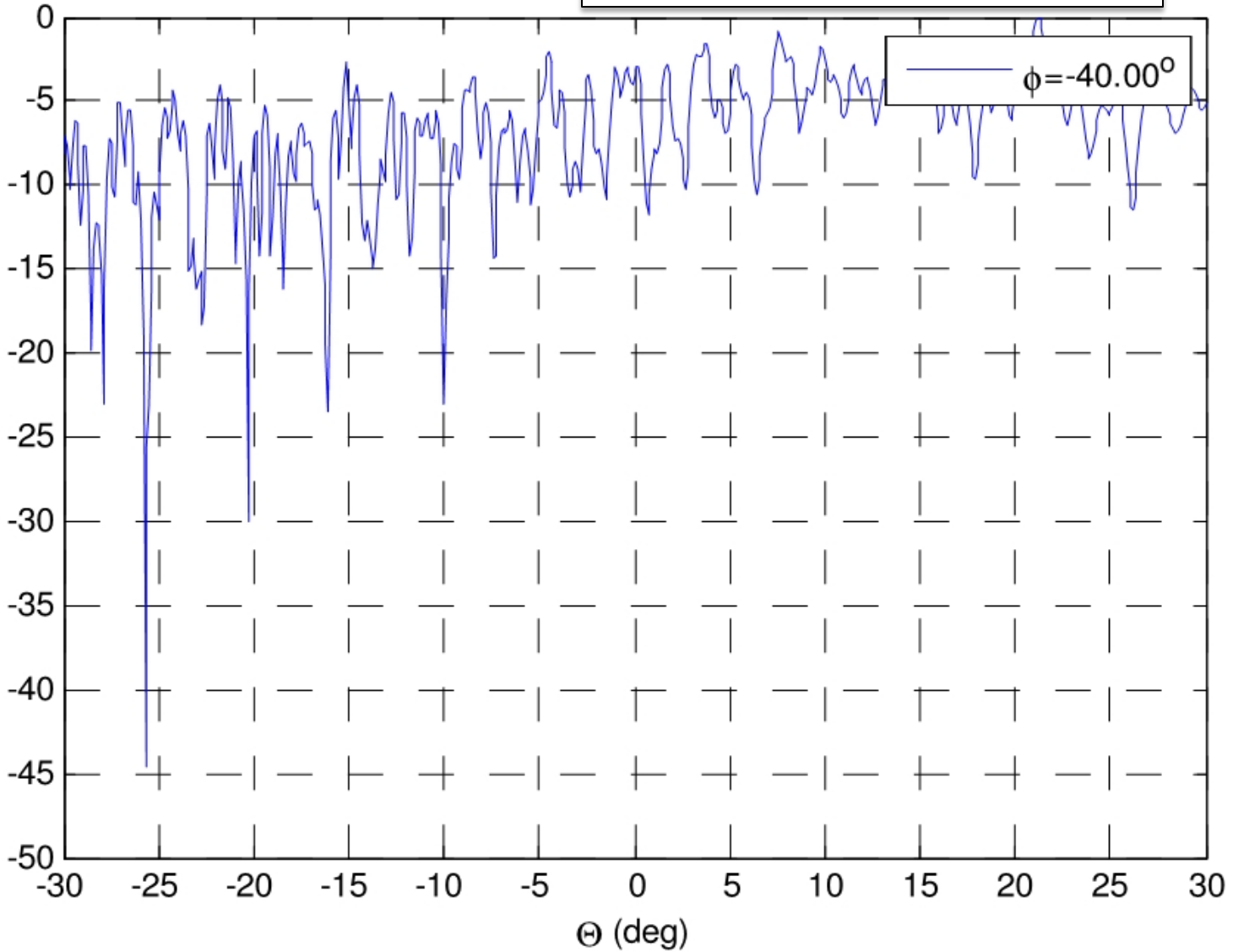


Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp--40.cut,

Peak Off-axis Gain = -24.5 dBi

Off-axis Gain Below Peak (dBi)

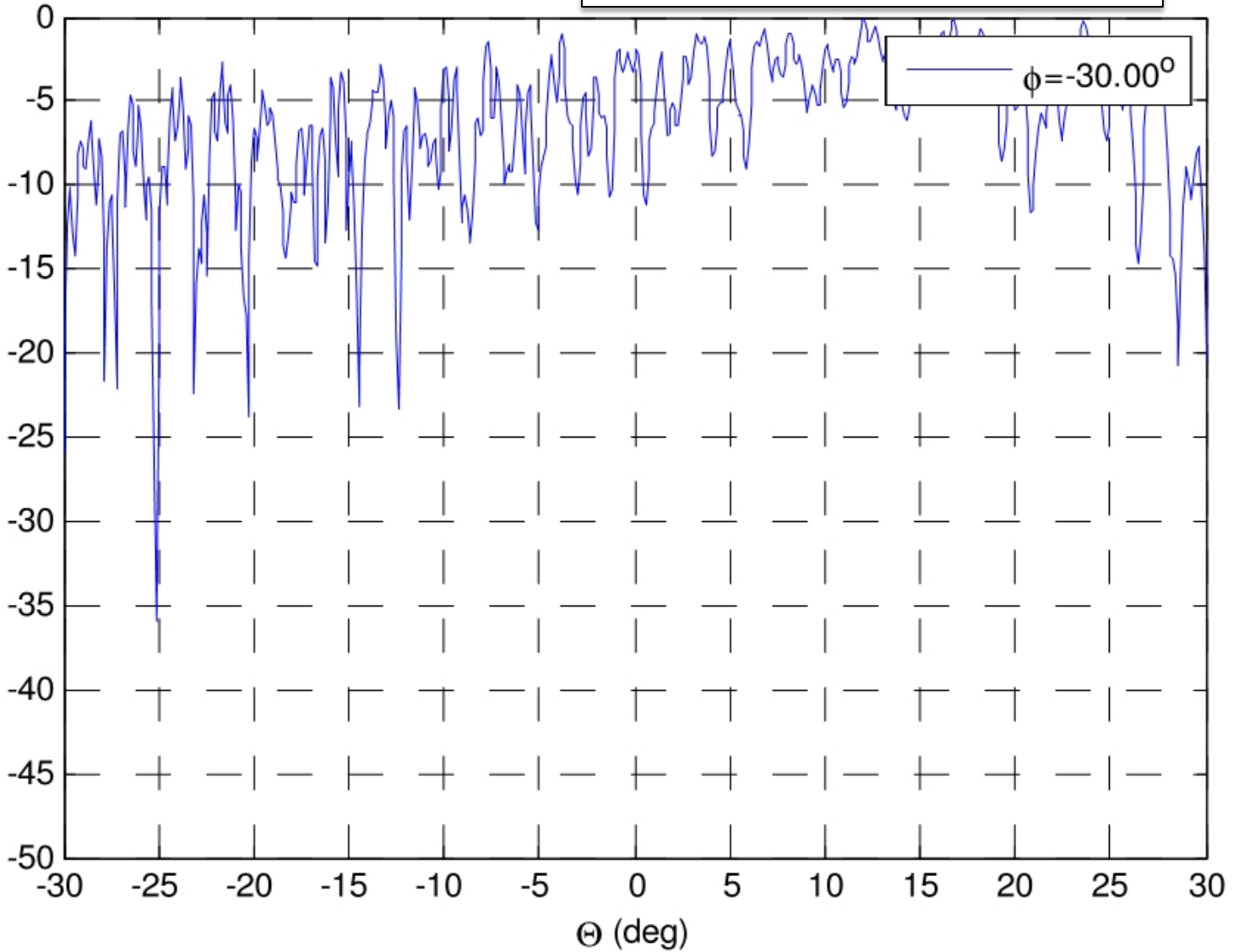


Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp--30.cut,

Peak Off-axis Gain = -25.5 dBi

Off-axis Gain Below Peak (dBi)

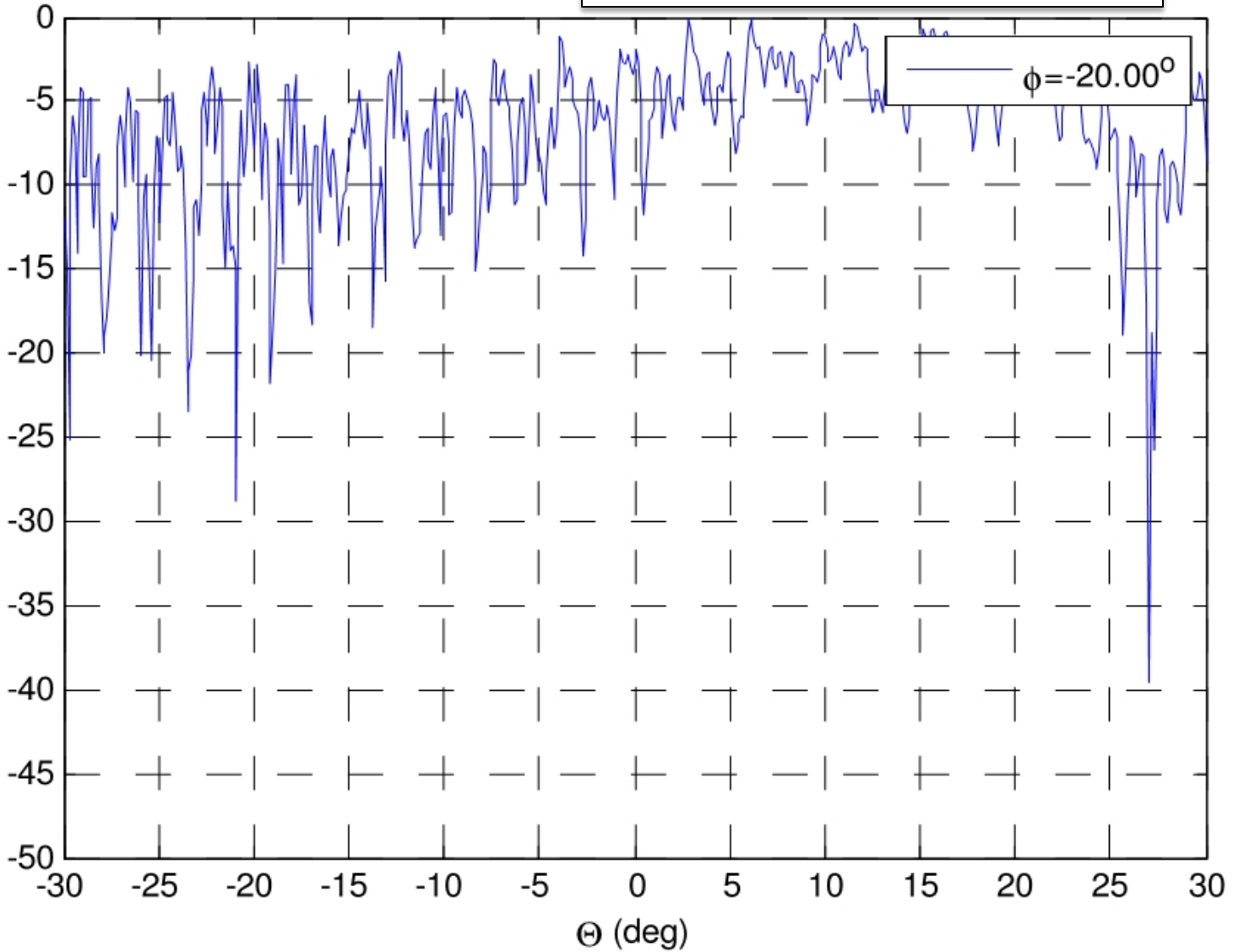


Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp--20.cut,

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

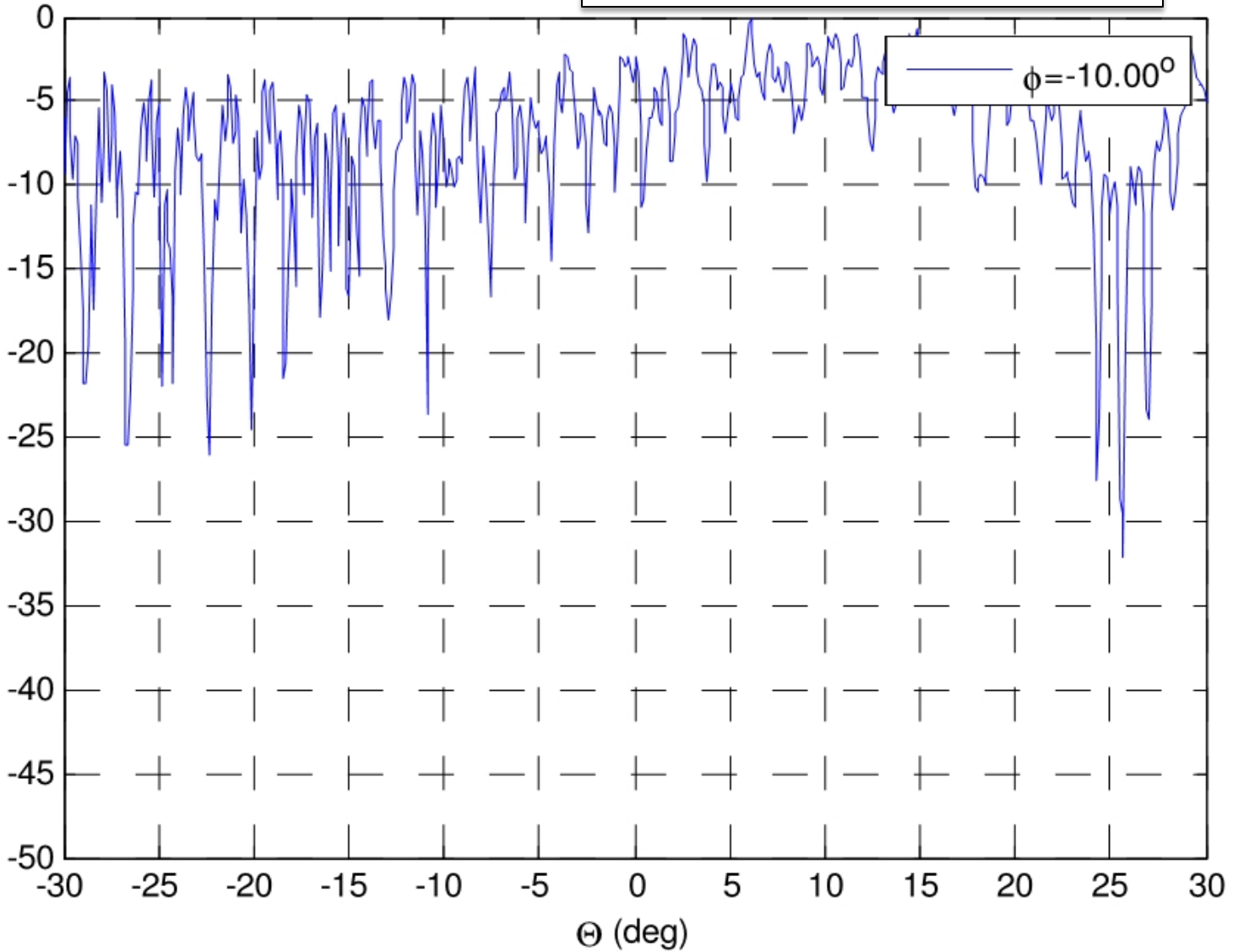


Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp--10.cut,

Peak Off-axis Gain = -25.1 dBi

Off-axis Gain Below Peak (dBi)

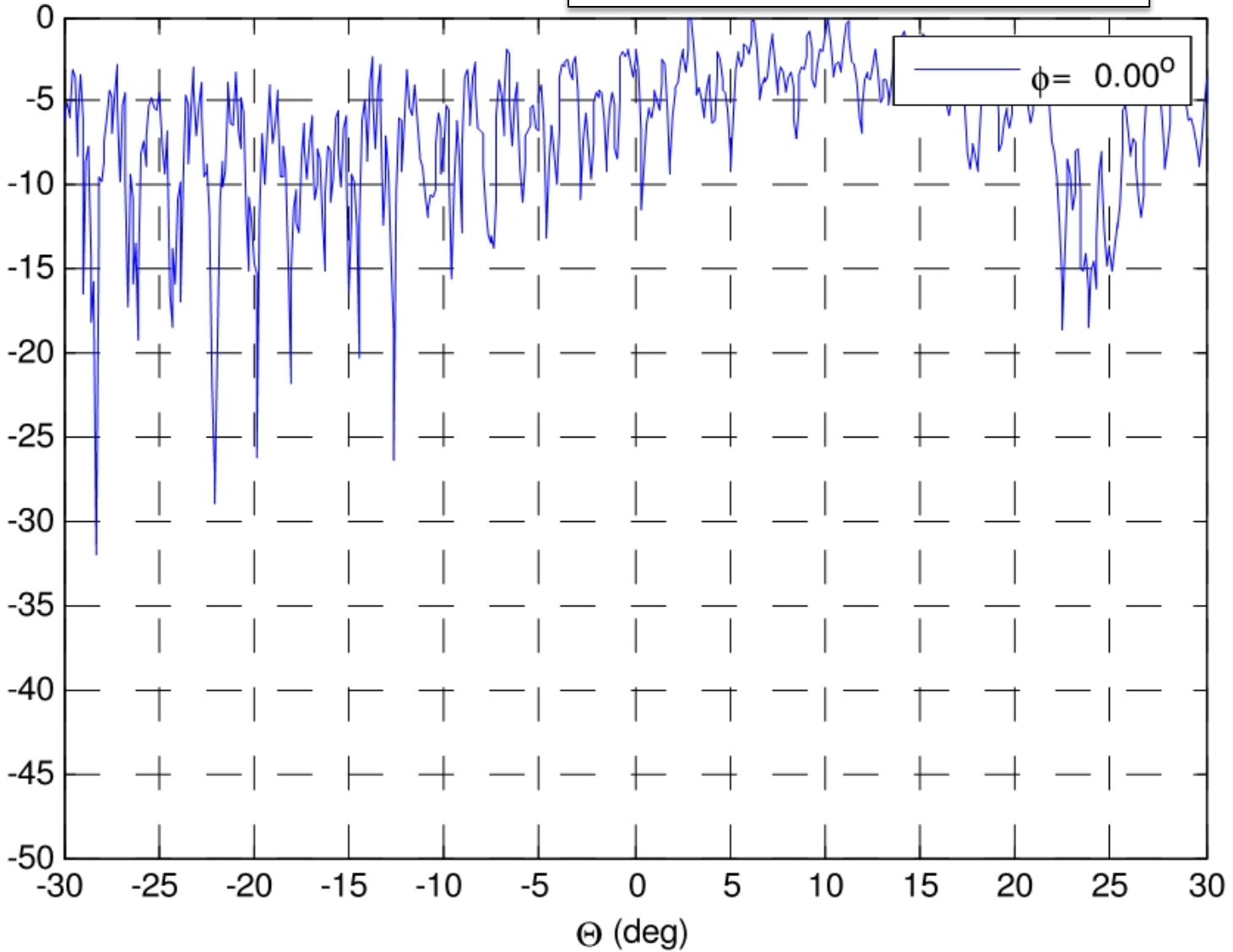


Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp-0.cut,

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

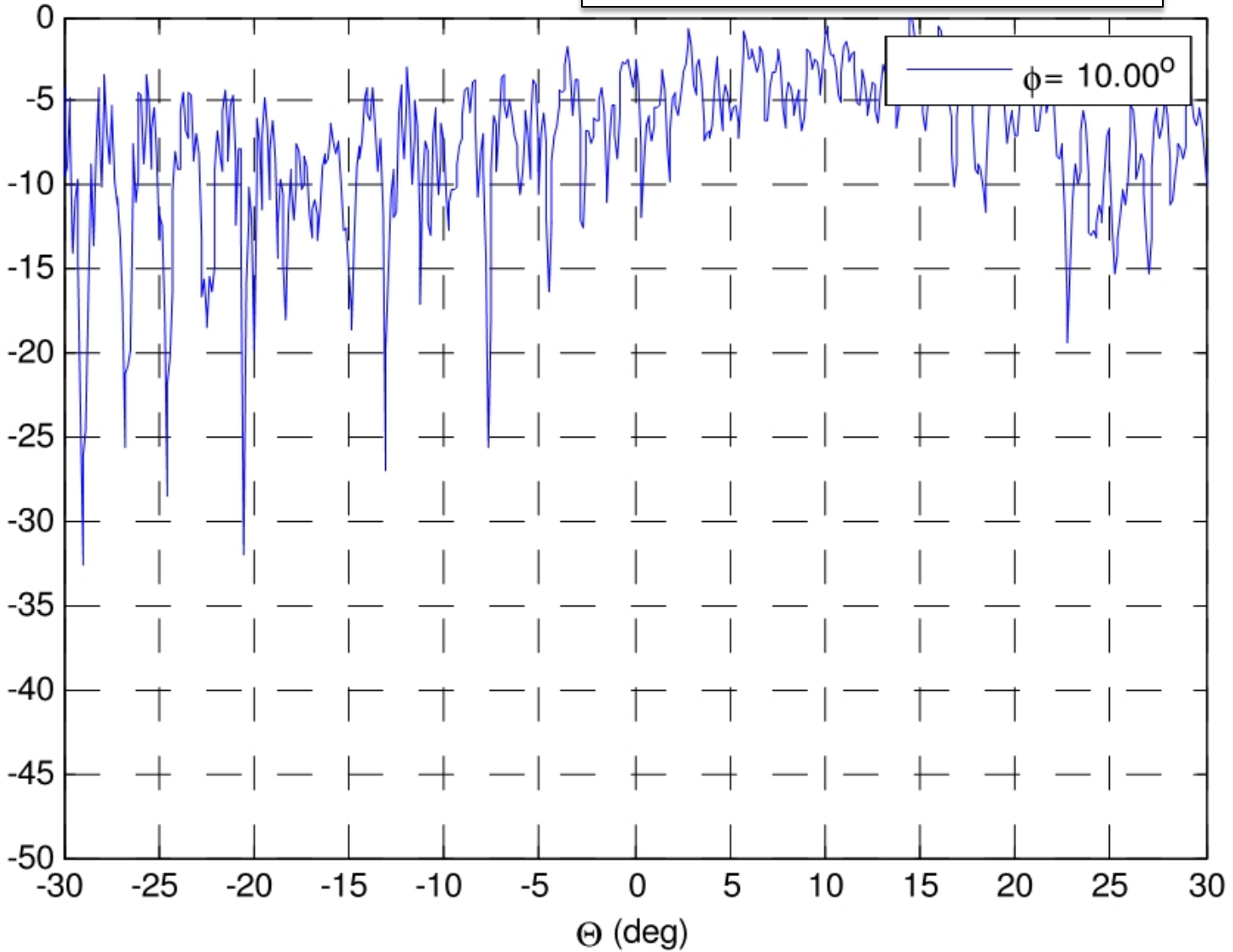


Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp-10.cut,

Peak Off-axis Gain = -24.8 dBi

Off-axis Gain Below Peak (dBi)

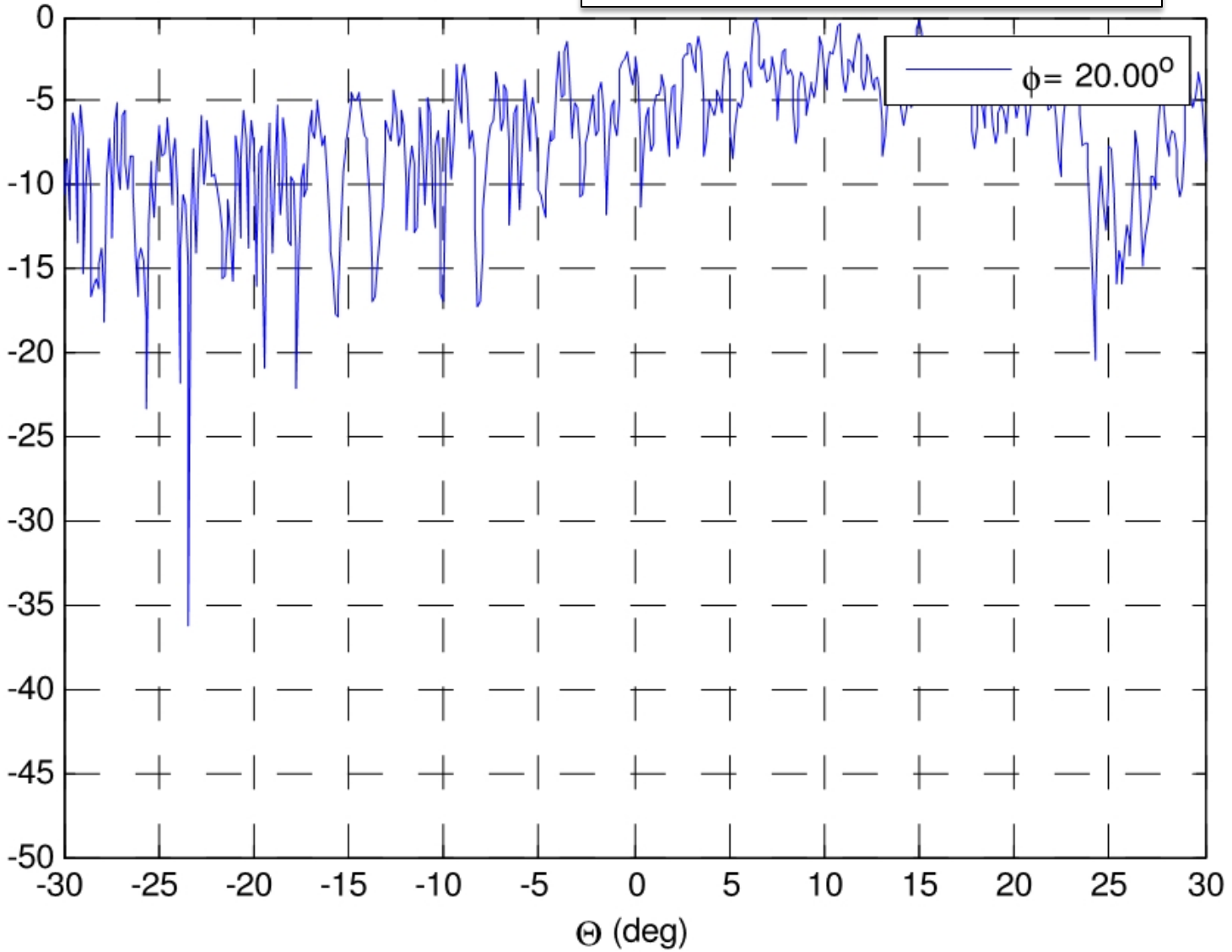


Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp-20.cut,

Peak Off-axis Gain = -25.1 dBi

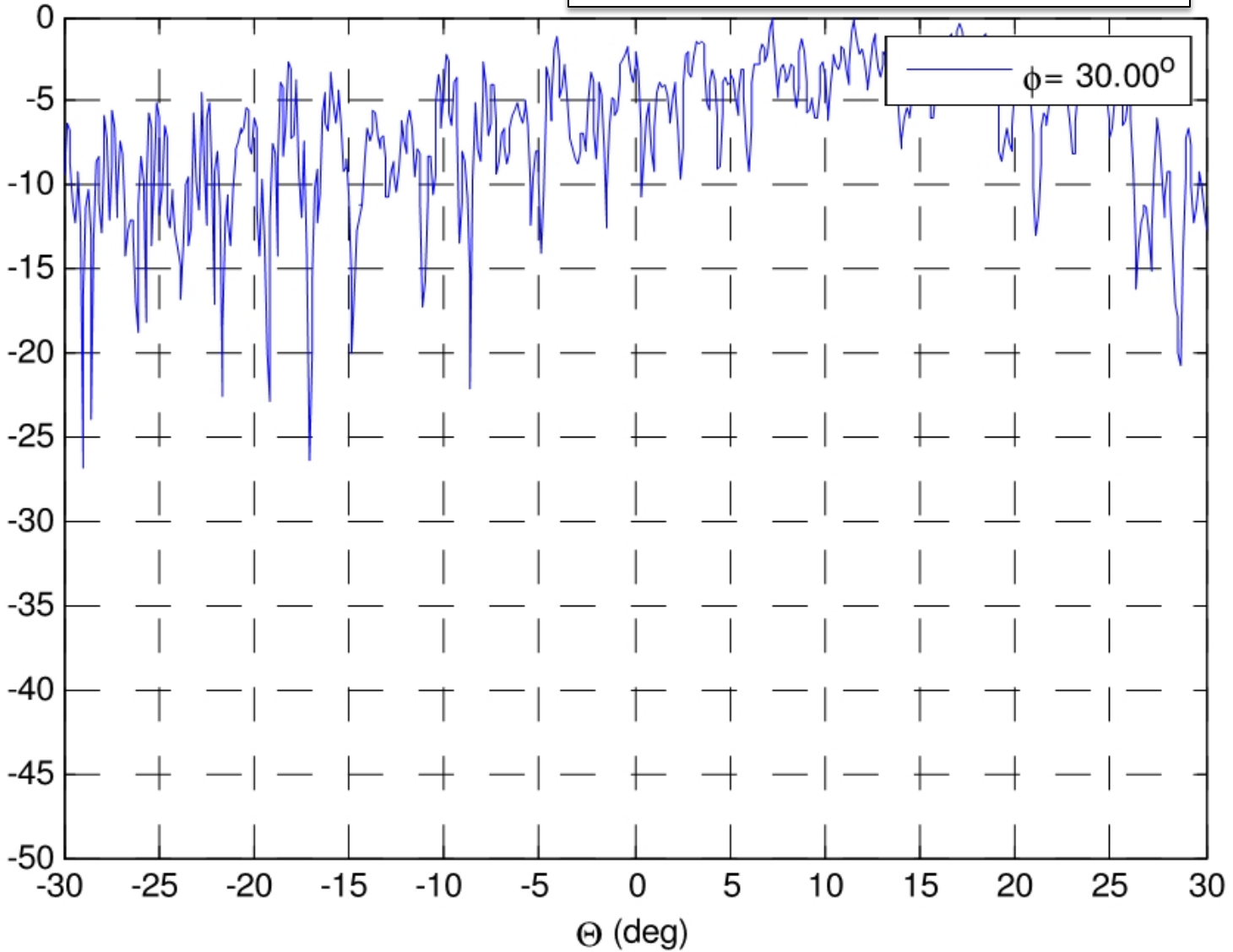
Off-axis Gain Below Peak (dBi)



Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp-30.cut, Peak Off-axis Gain = -25.92 dBi

Off-axis Gain Below Peak (dBi)

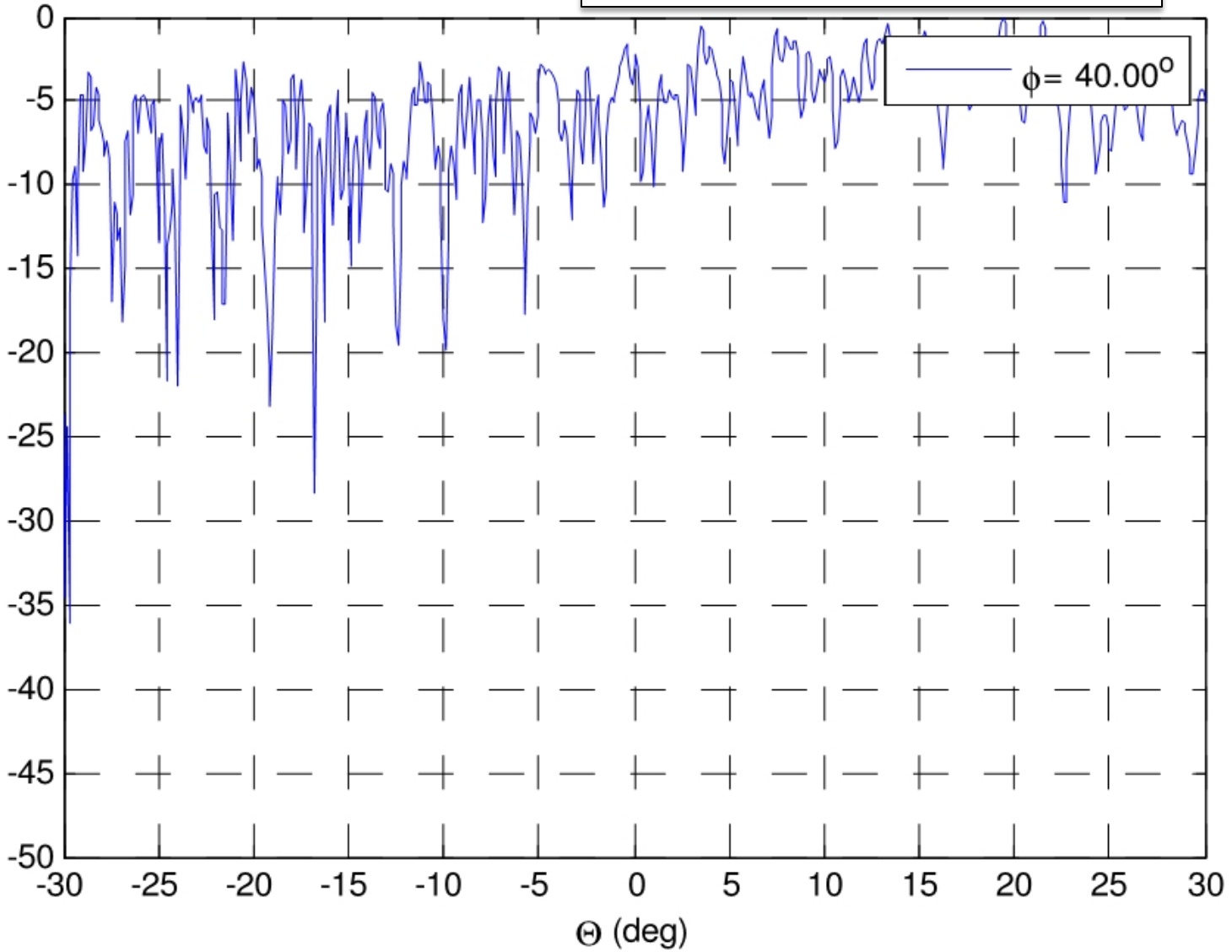


Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp-40.cut,

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

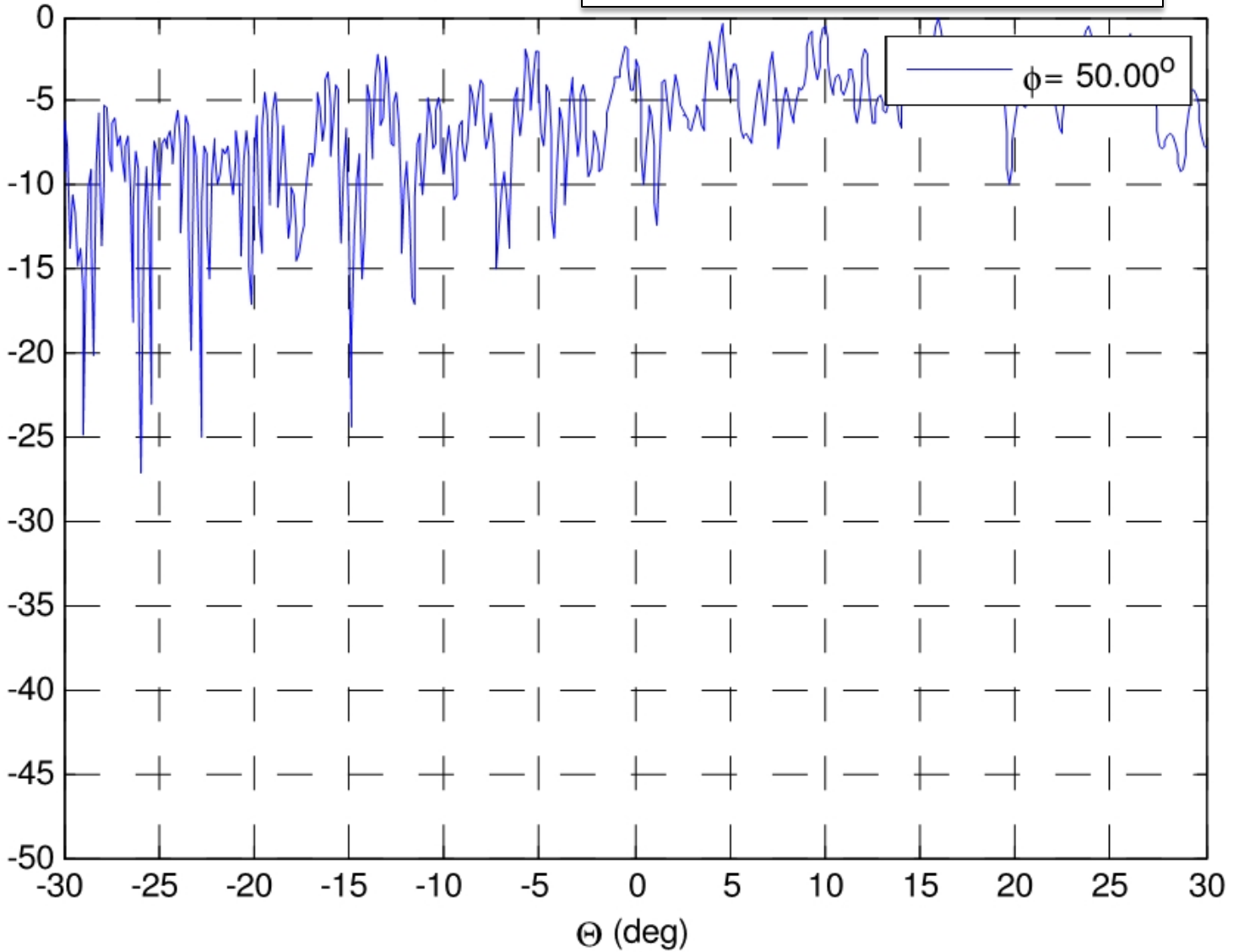


Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp-50.cut,

Peak Off-axis Gain = -25.5 dBi

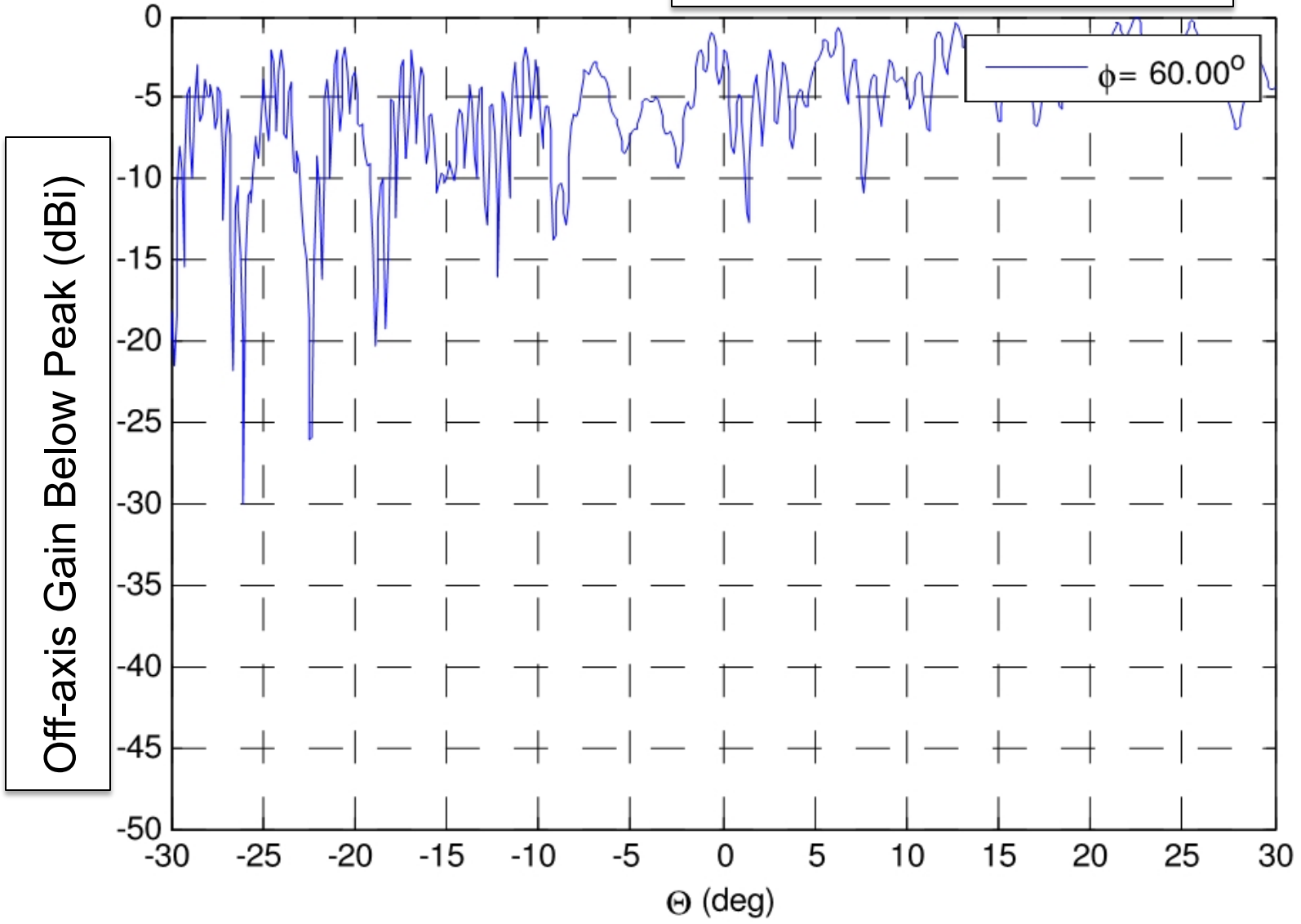
Off-axis Gain Below Peak (dBi)



Normalized pattern cuts - farfield

Input file: tx-17.5-rhcp-60.cut,

Peak Off-axis Gain = -25.3 dBi



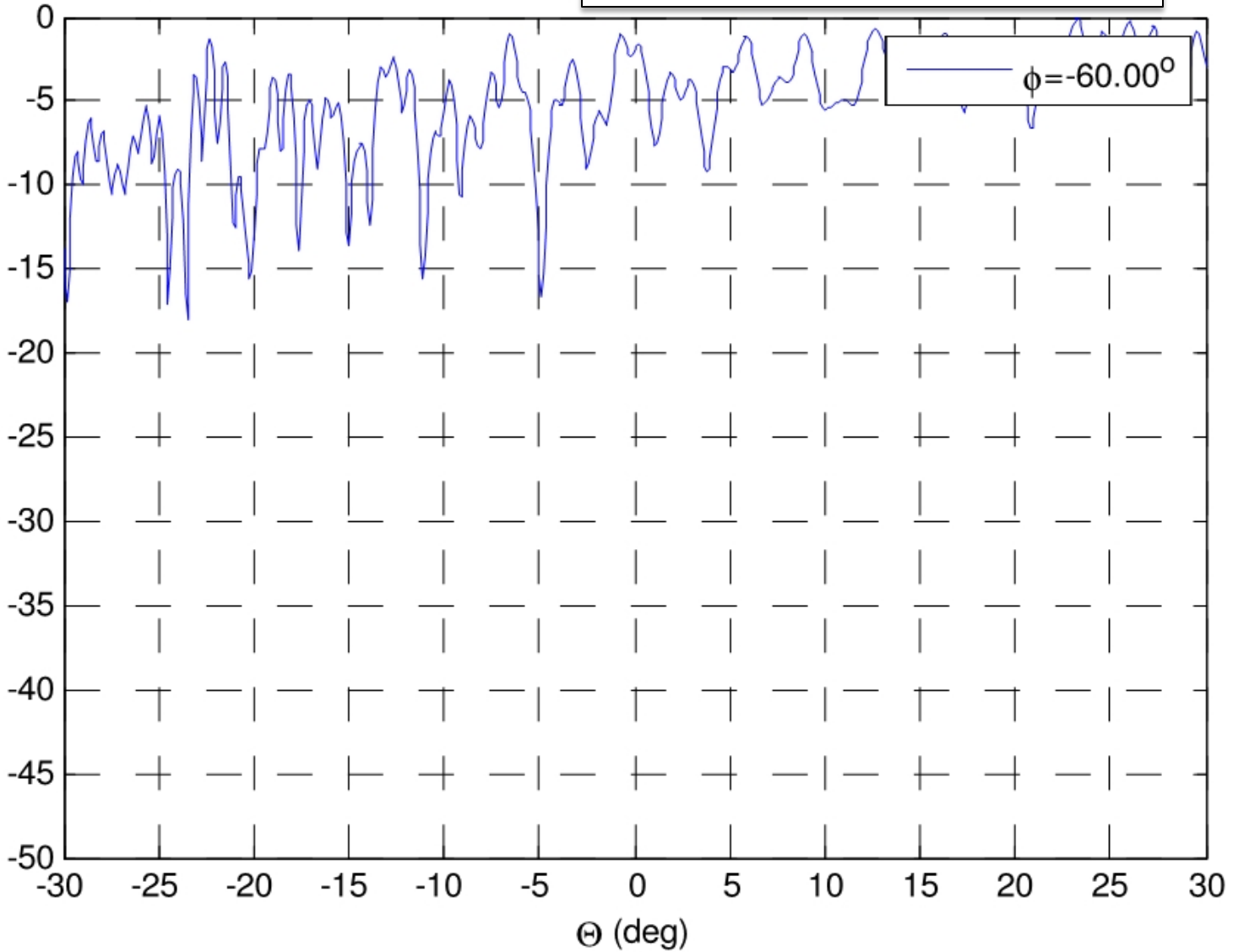
LHCP = 17.5 GHz

Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp--60.cut,

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

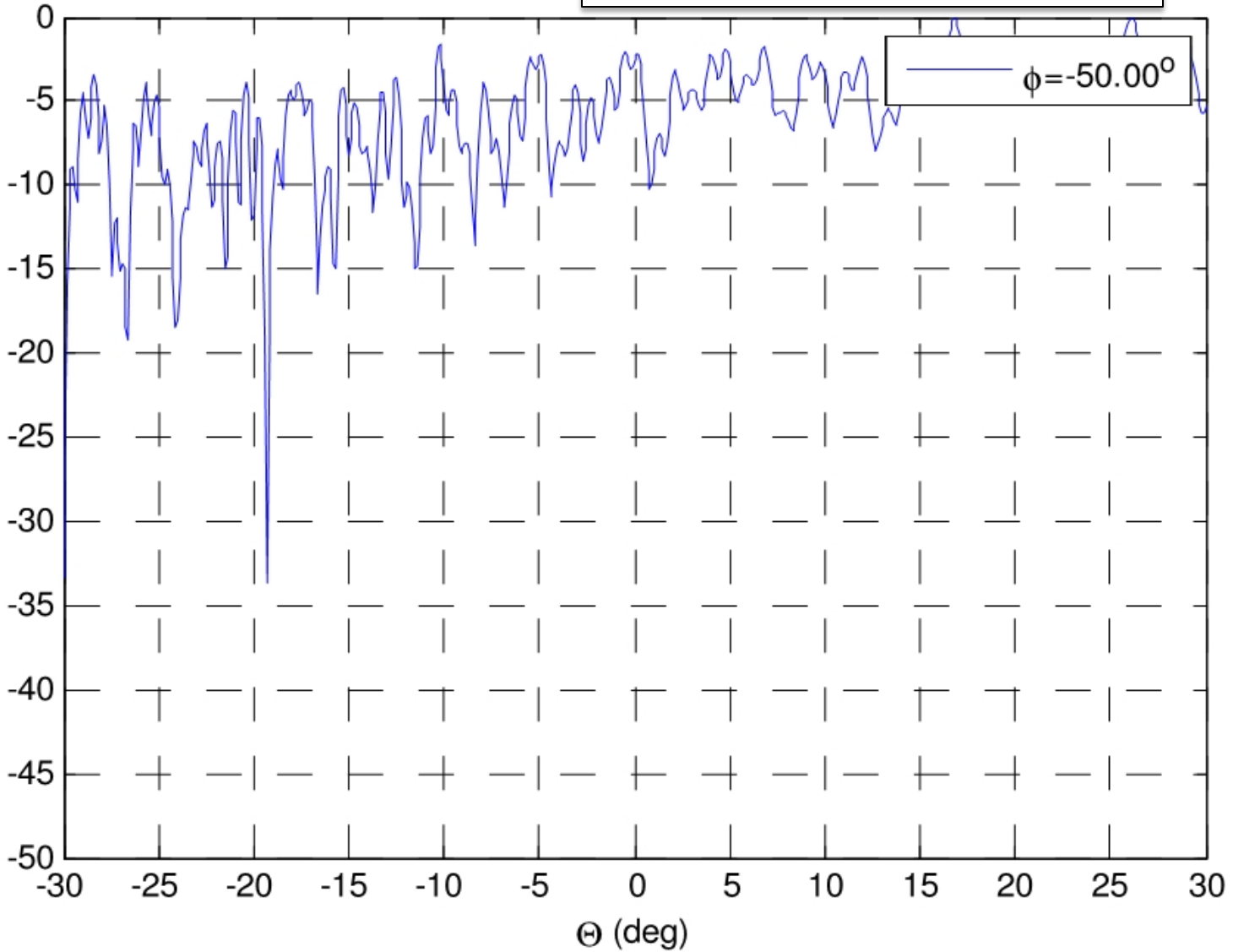


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp--50.cut,

Peak Off-axis Gain = -25.1 dBi

Off-axis Gain Below Peak (dBi)

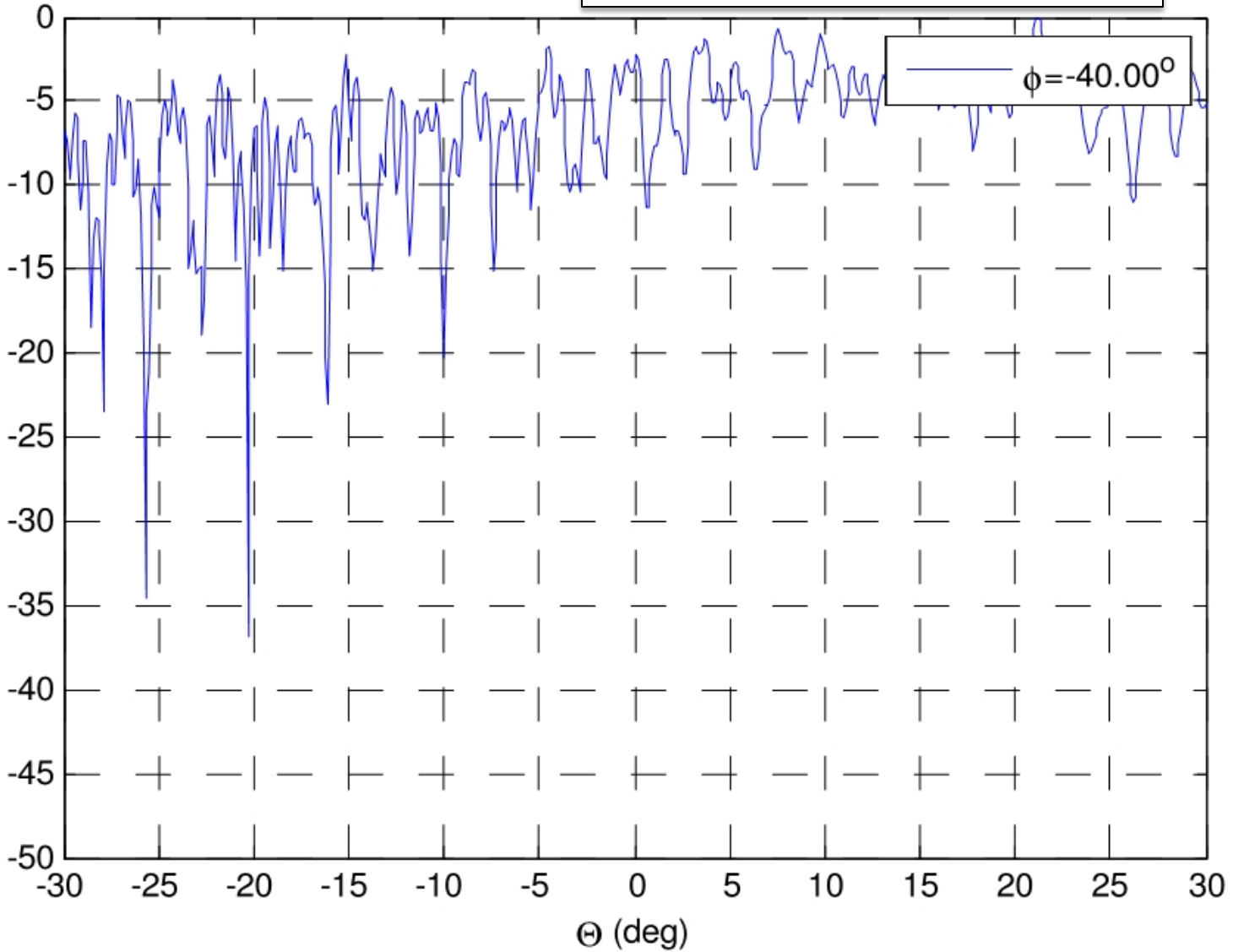


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp--40.cut,

Peak Off-axis Gain = -24.8 dBi

Off-axis Gain Below Peak (dBi)

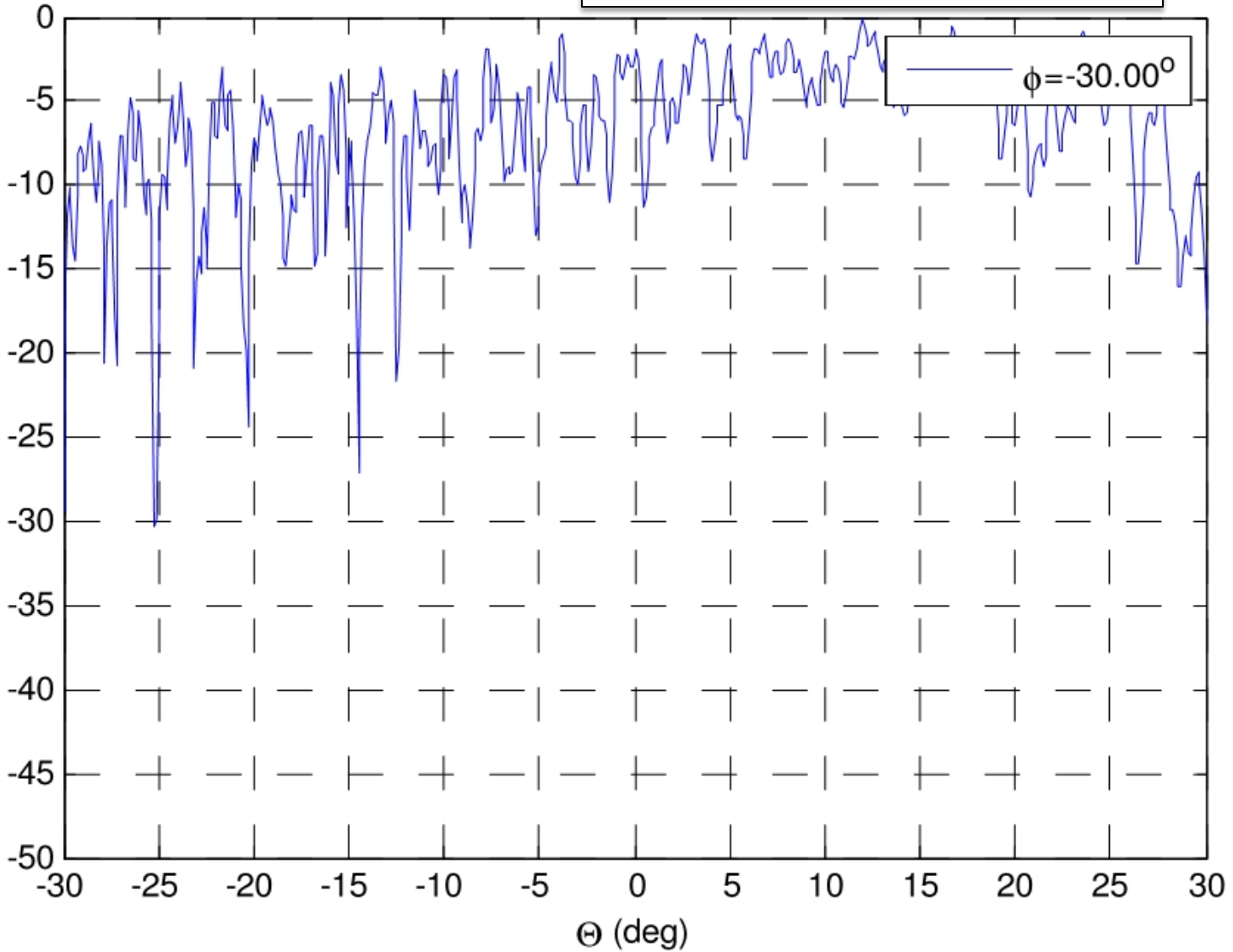


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp--30.cut,

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

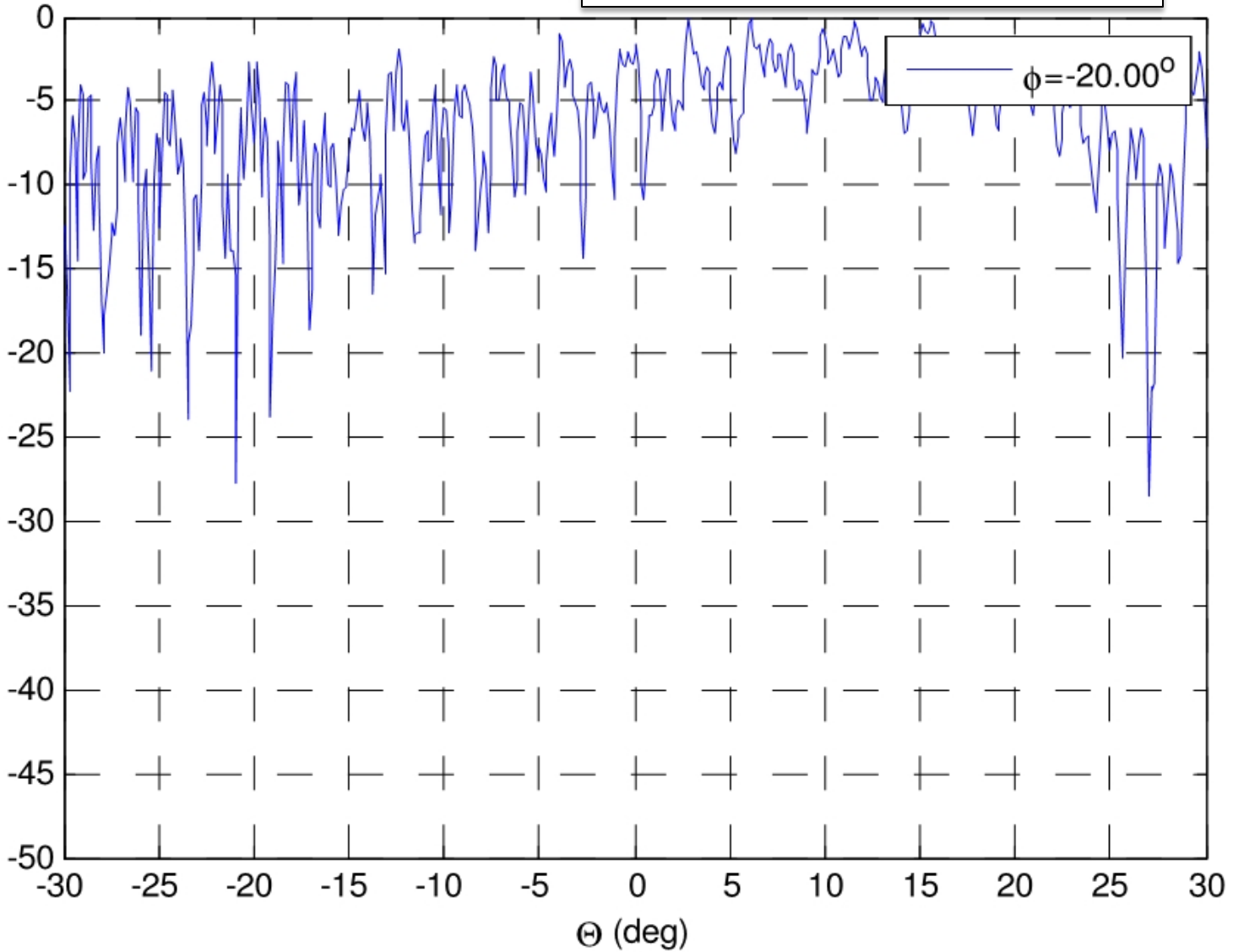


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp--20.cut,

Peak Off-axis Gain = -25.6 dBi

Off-axis Gain Below Peak (dBi)

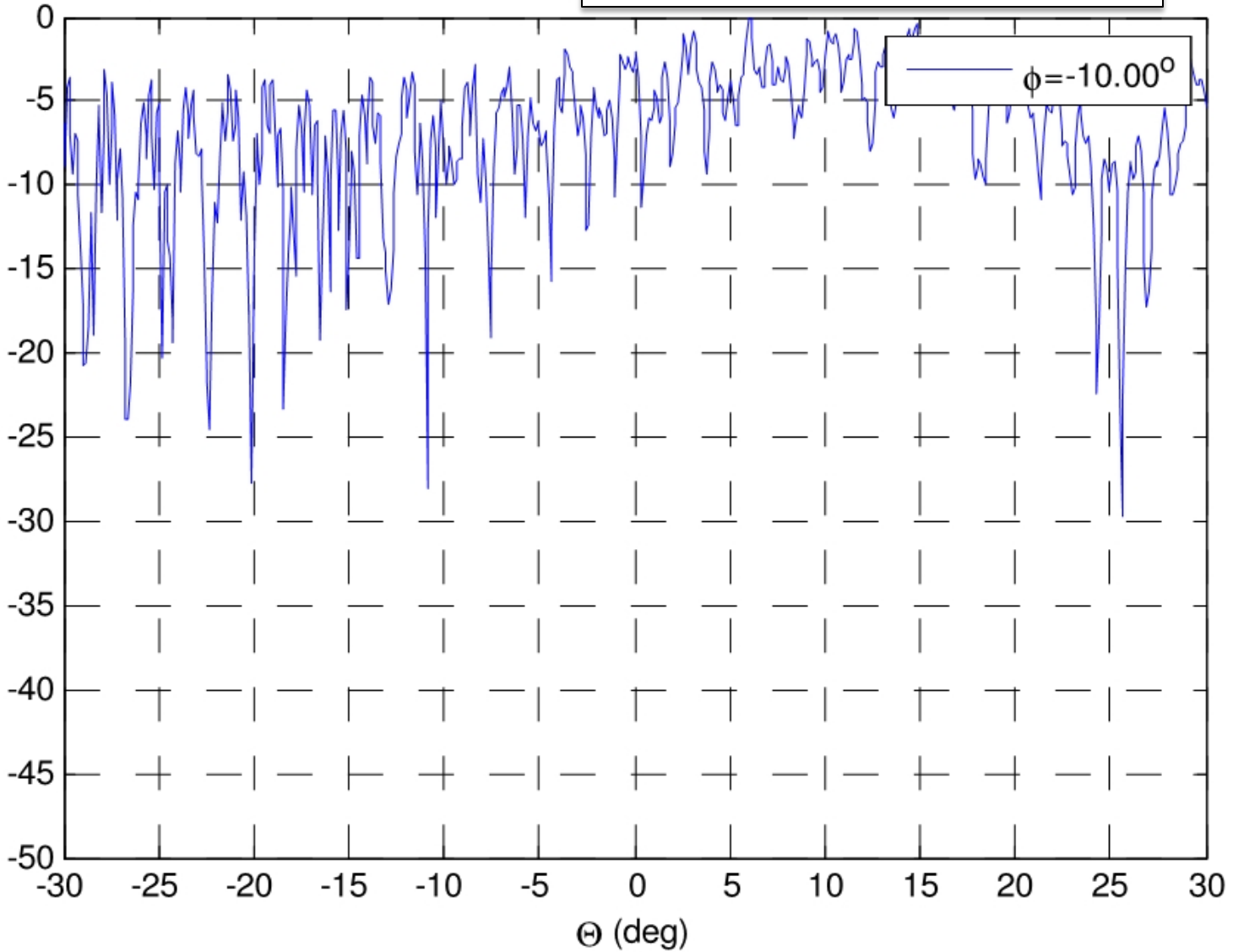


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp--10.cut,

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

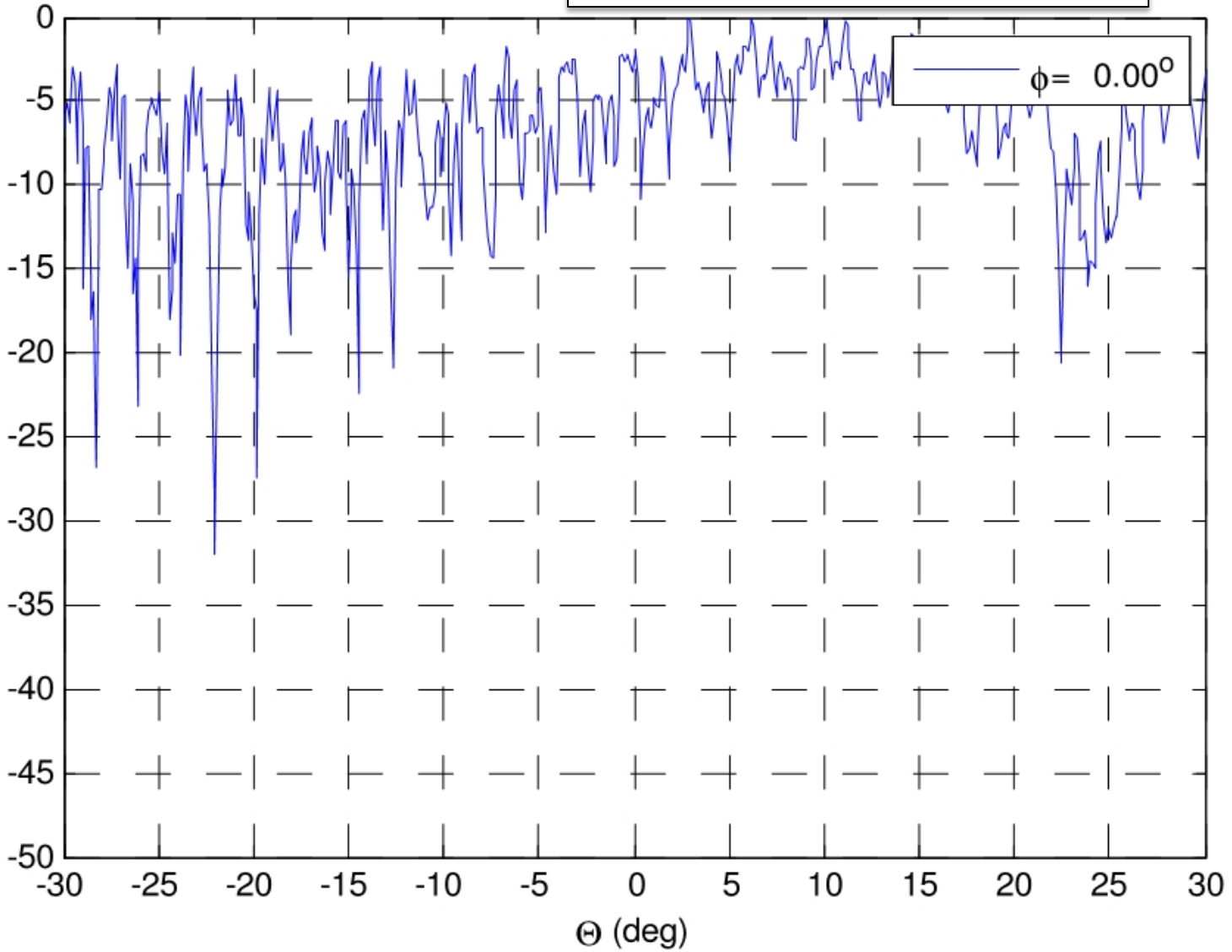


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp-0.cut,

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

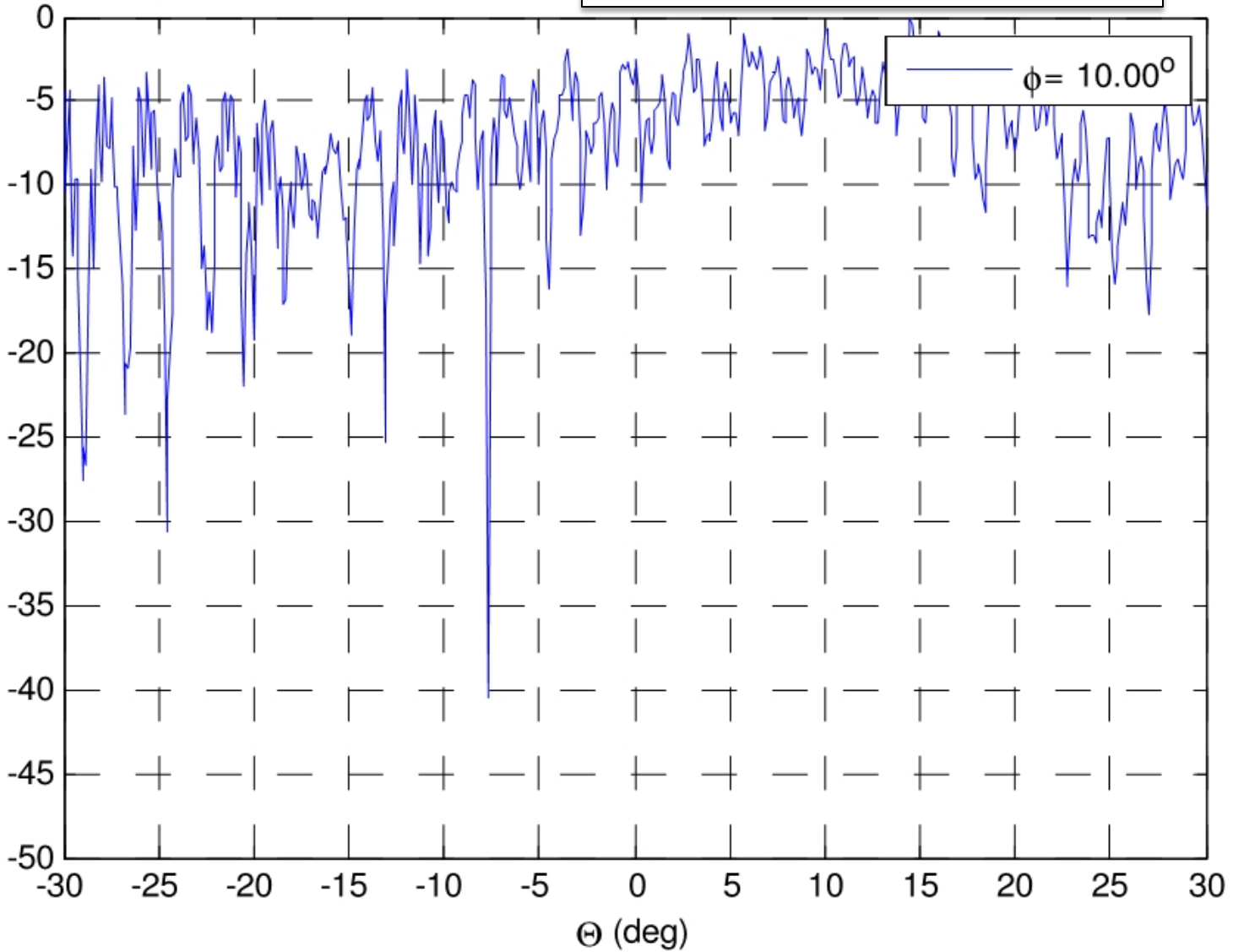


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp-10.cut,

Peak Off-axis Gain = -24.7 dBi

Off-axis Gain Below Peak (dBi)

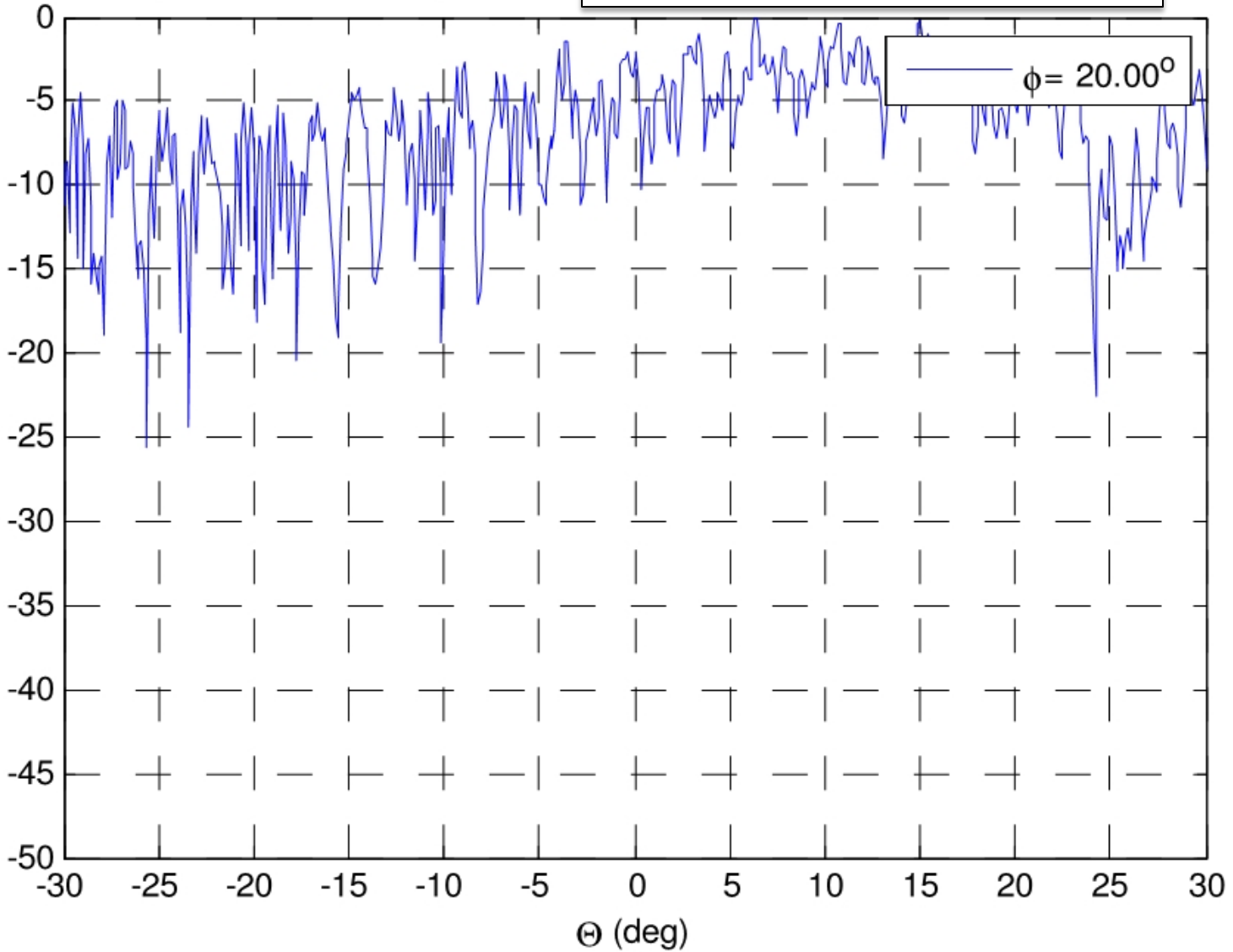


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp-20.cut,

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

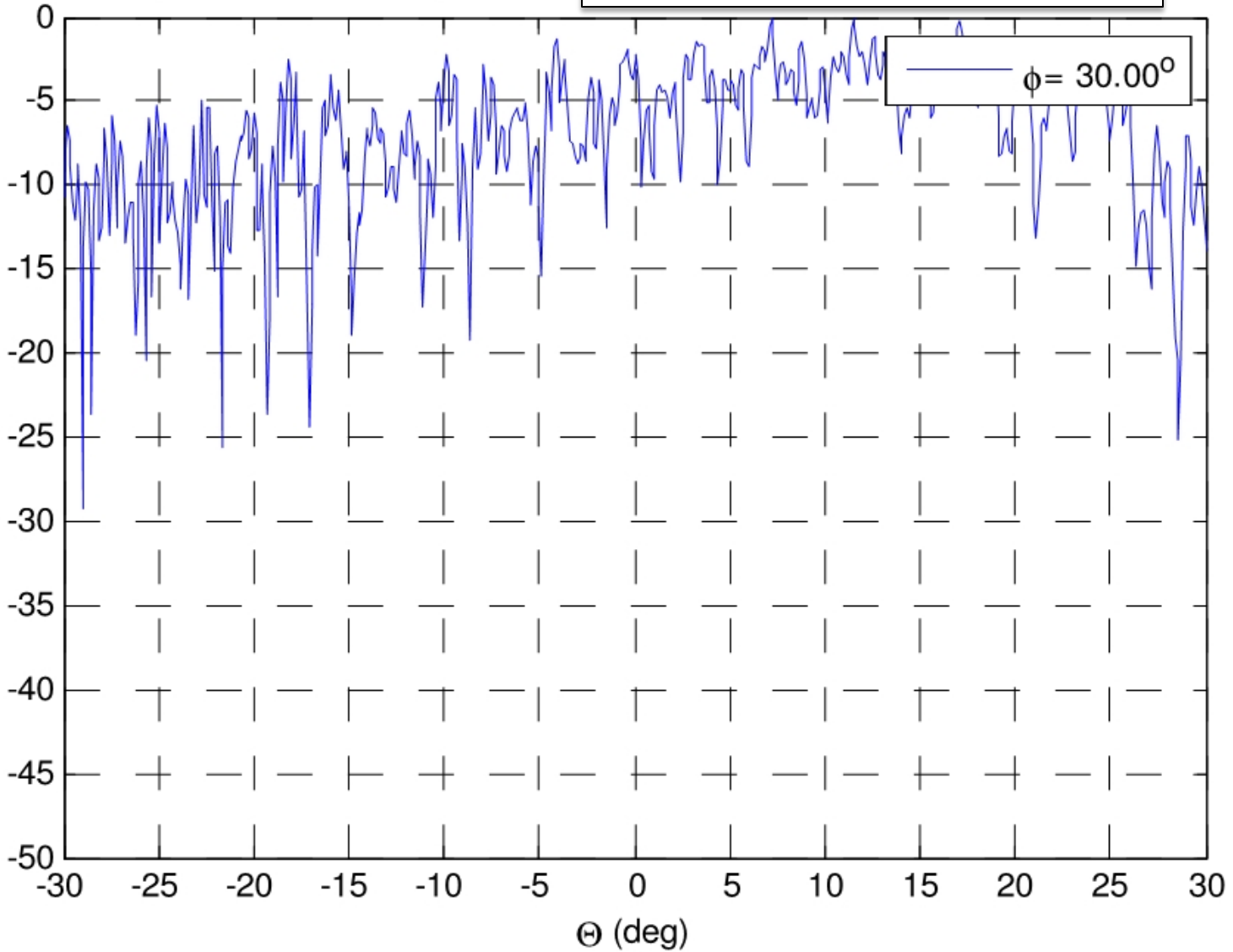


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp-30.cut,

Peak Off-axis Gain = -25.1 dBi

Off-axis Gain Below Peak (dBi)

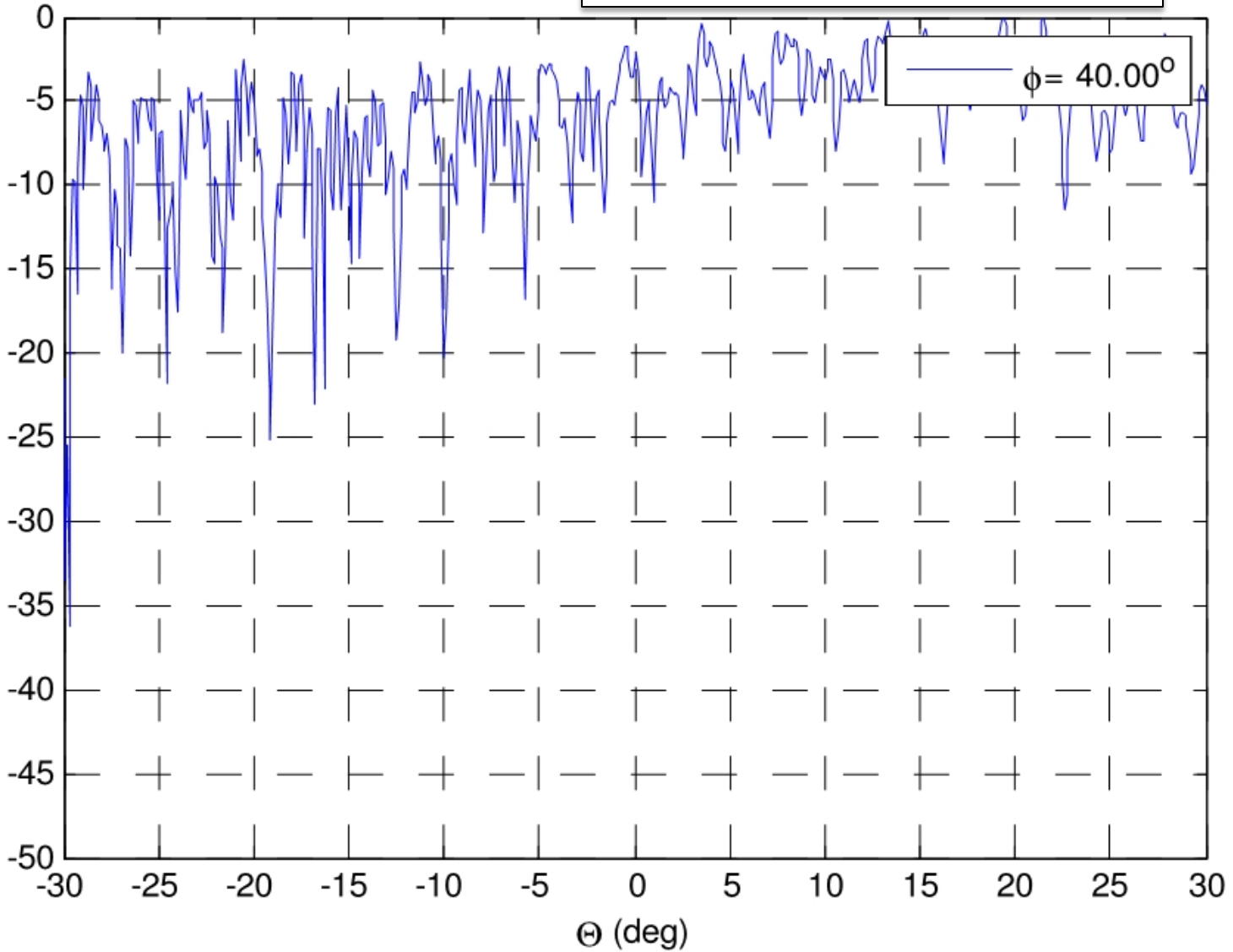


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp-40.cut,

Peak Off-axis Gain = -25.3 dBi

Off-axis Gain Below Peak (dBi)

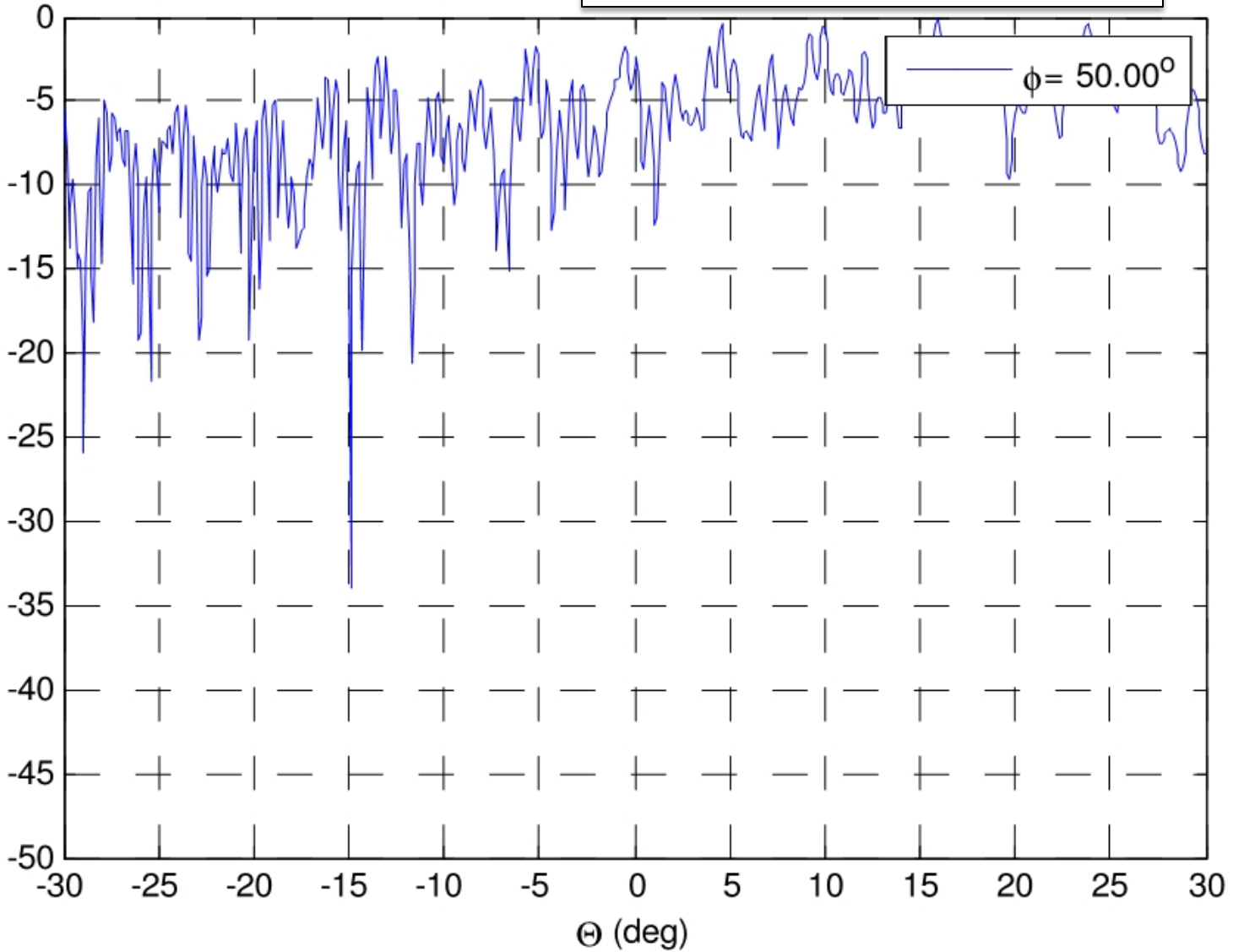


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp-50.cut,

Peak Off-axis Gain = -24.8 dBi

Off-axis Gain Below Peak (dBi)

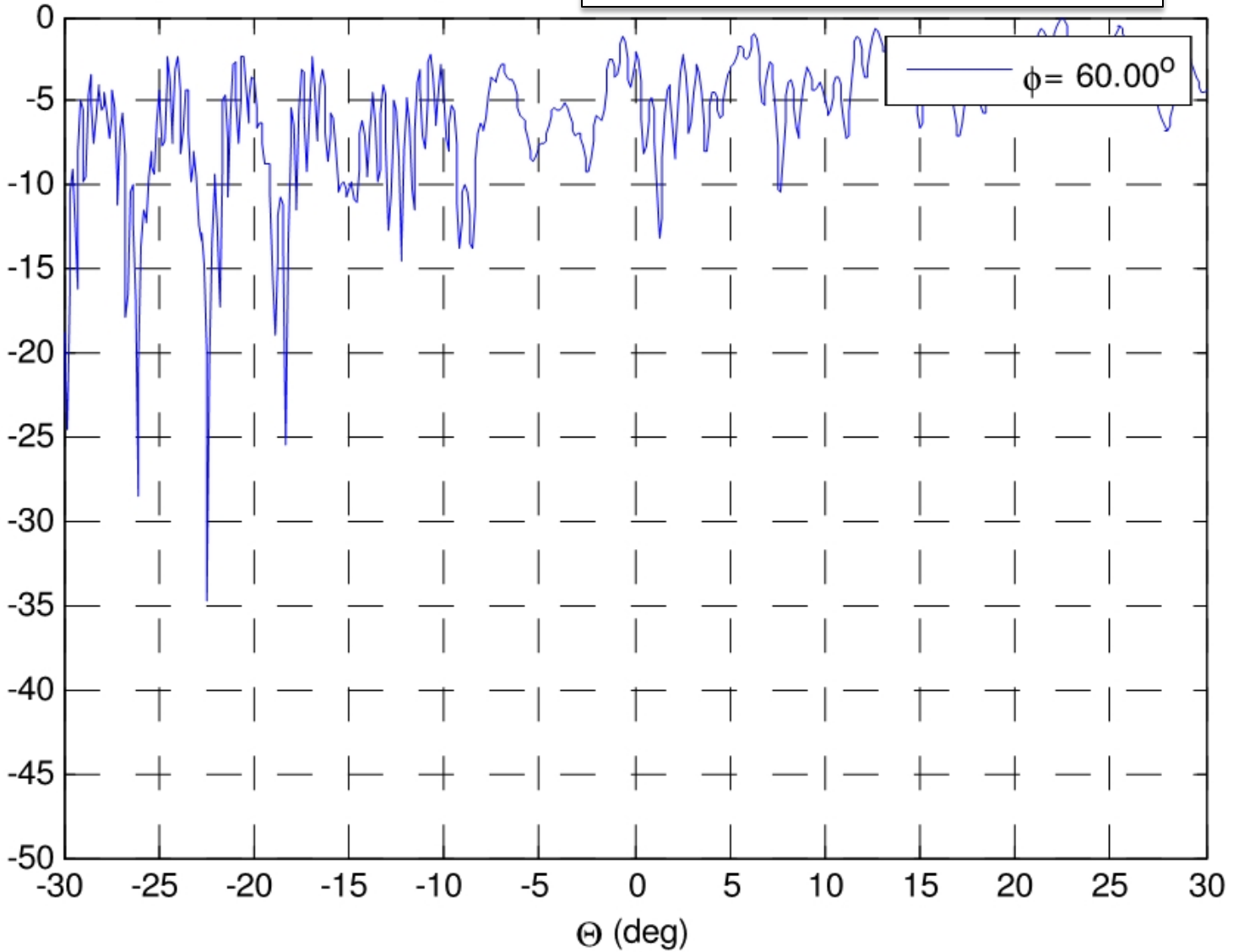


Normalized pattern cuts - farfield

Input file: tx-17.5-lhcp-60.cut,

Peak Off-axis Gain = -25.3 dBi

Off-axis Gain Below Peak (dBi)



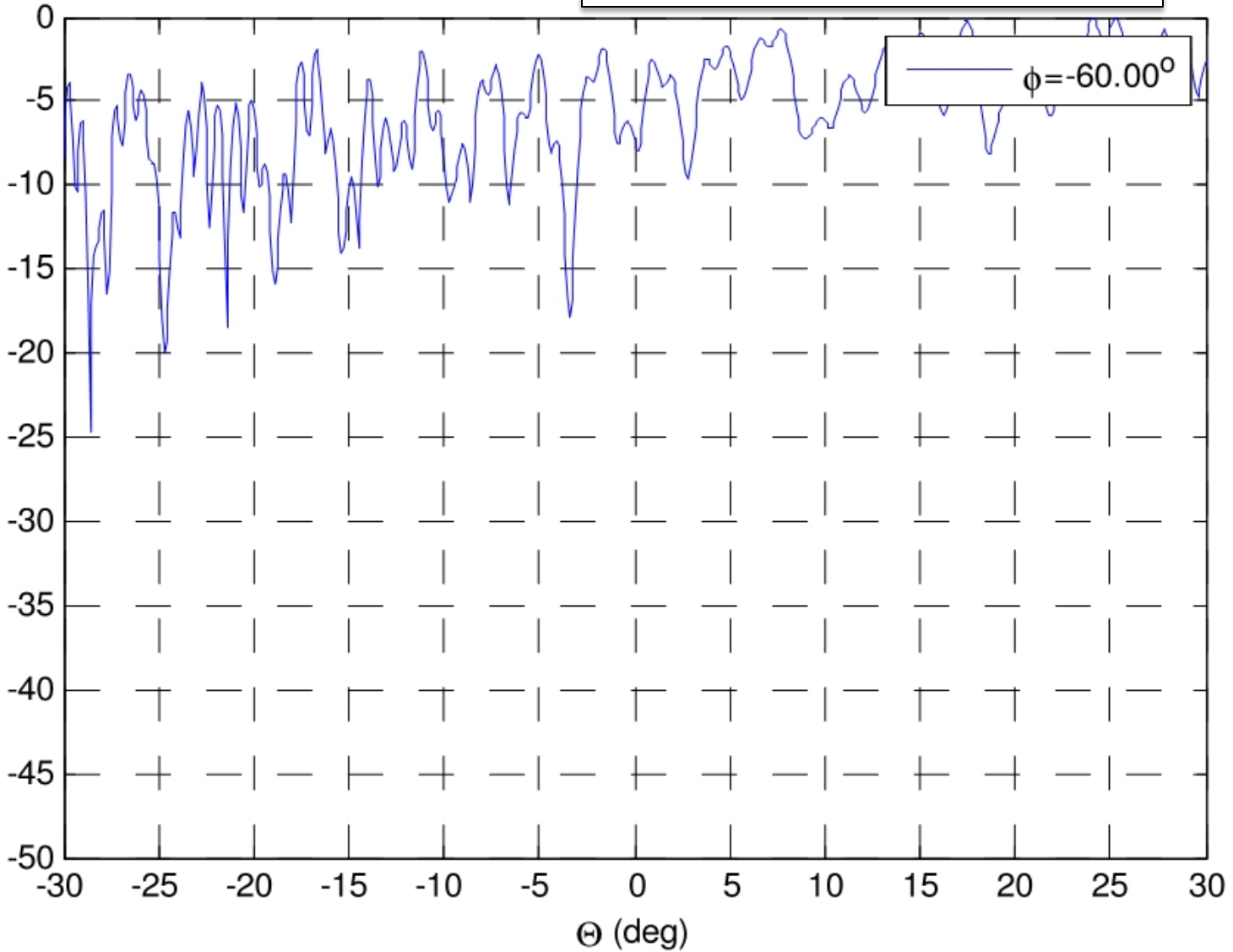
RHCP = 17.695 GHz

Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp--60.cut,

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

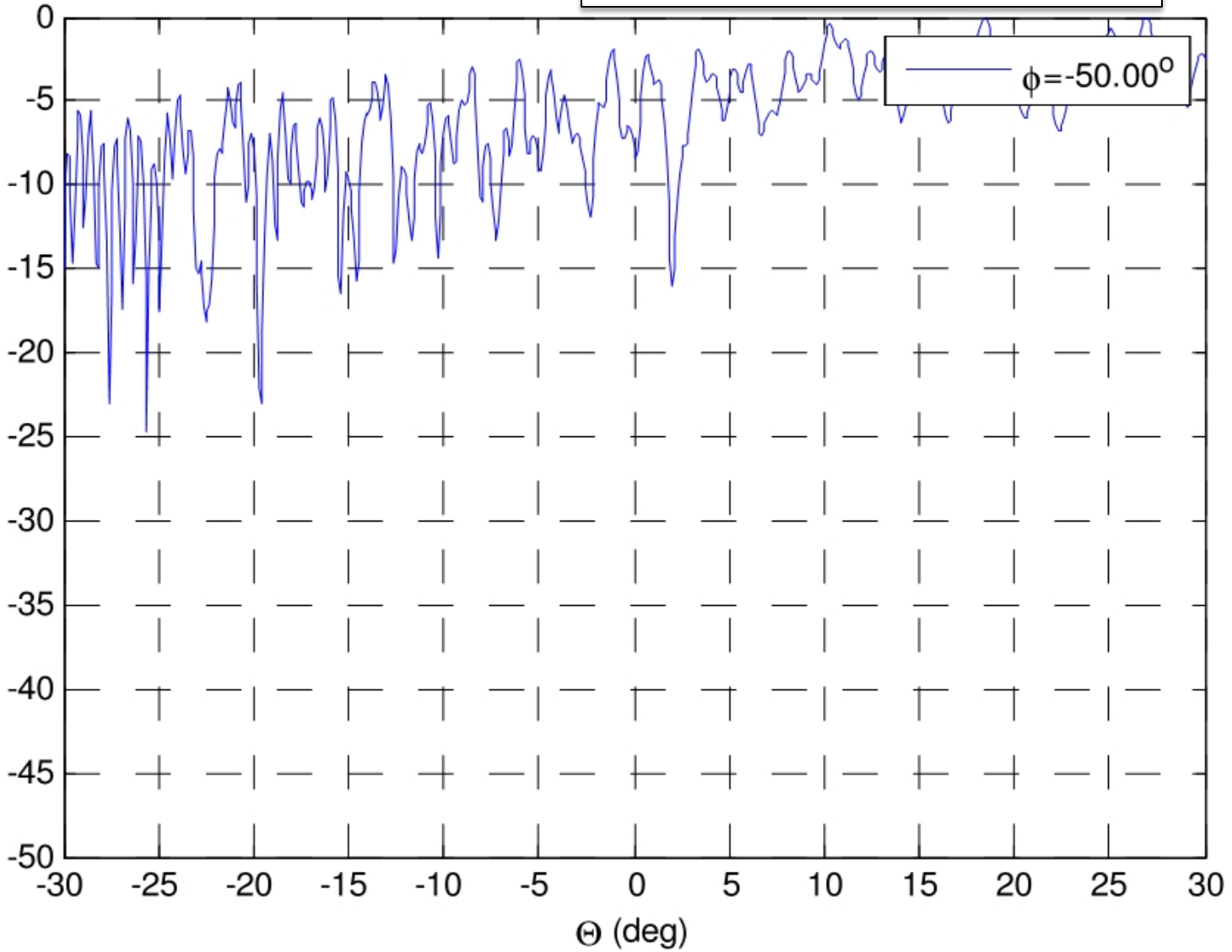


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp--50.cut,

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

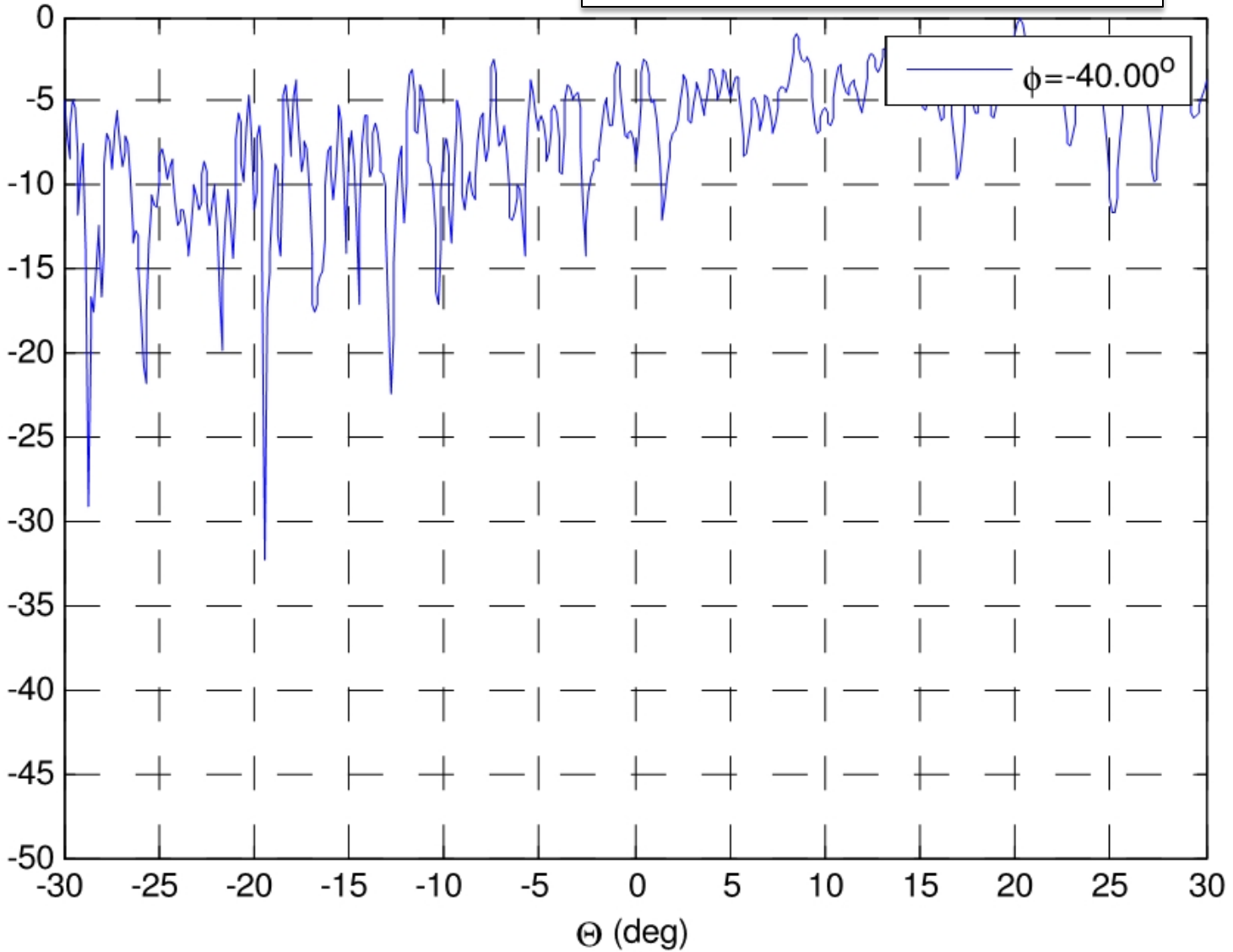


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp--40.cut,

Peak Off-axis Gain = -24.6 dBi

Off-axis Gain Below Peak (dBi)

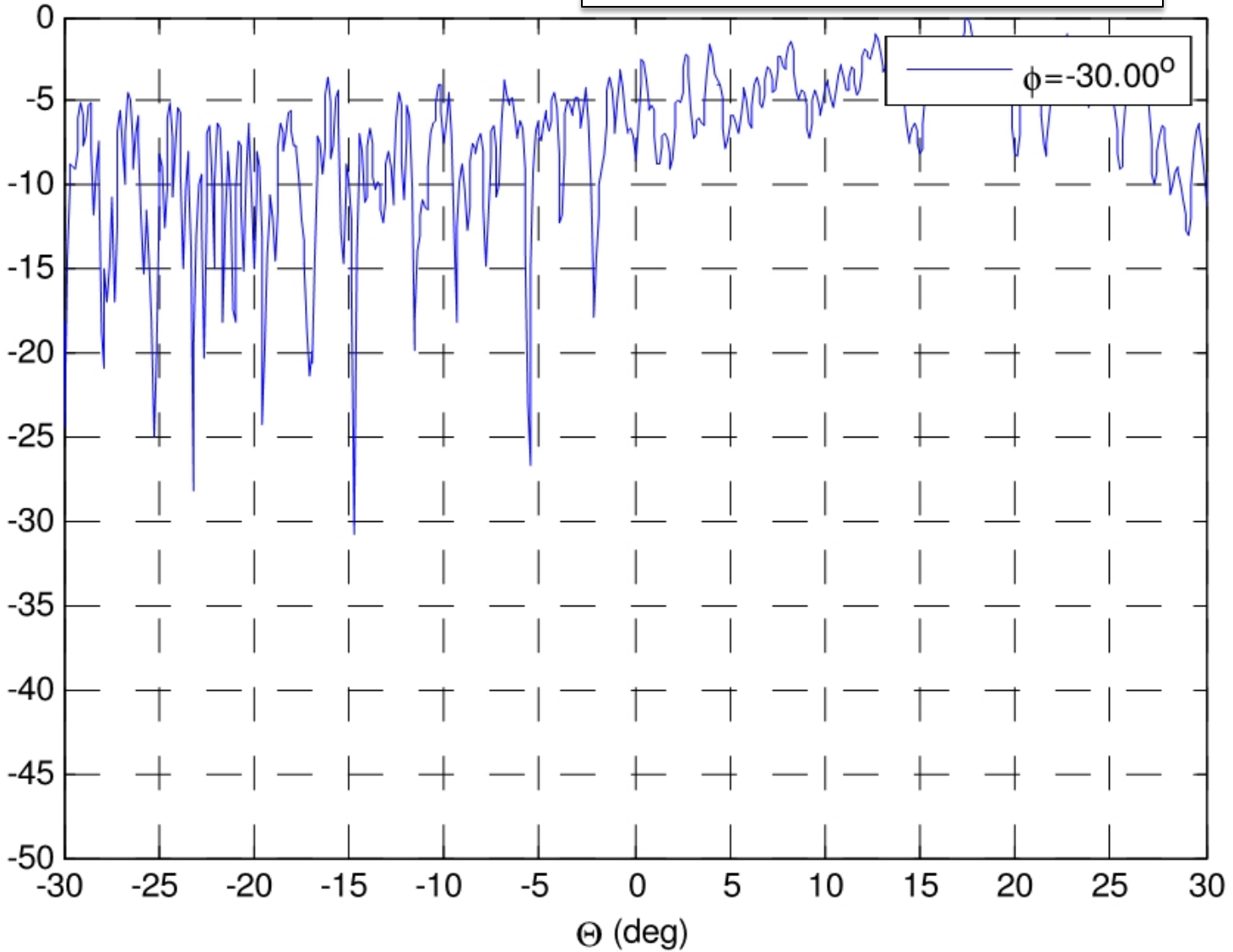


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp--30.cut,

Peak Off-axis Gain = -24.6 dBi

Off-axis Gain Below Peak (dBi)

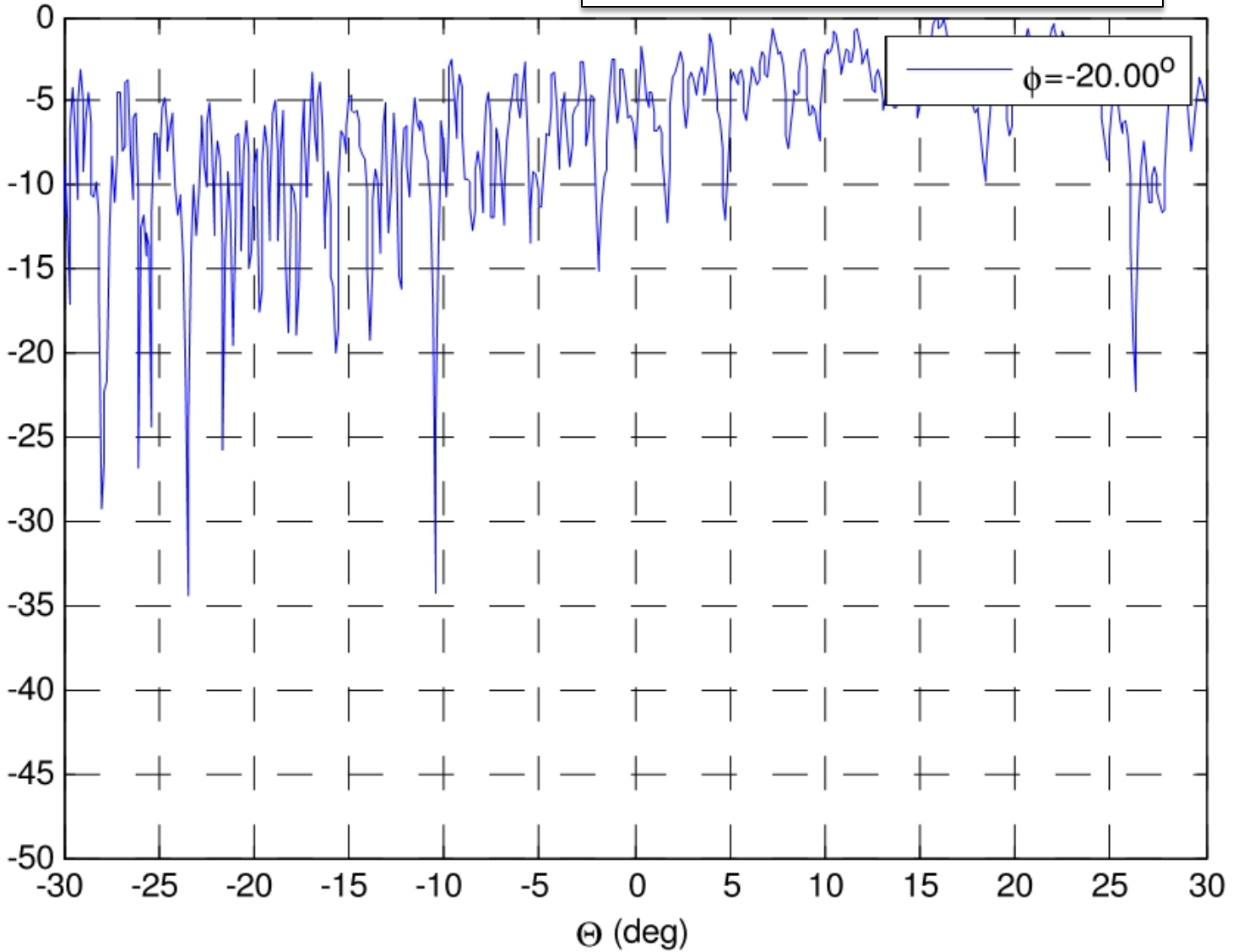


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp--20.cut,

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

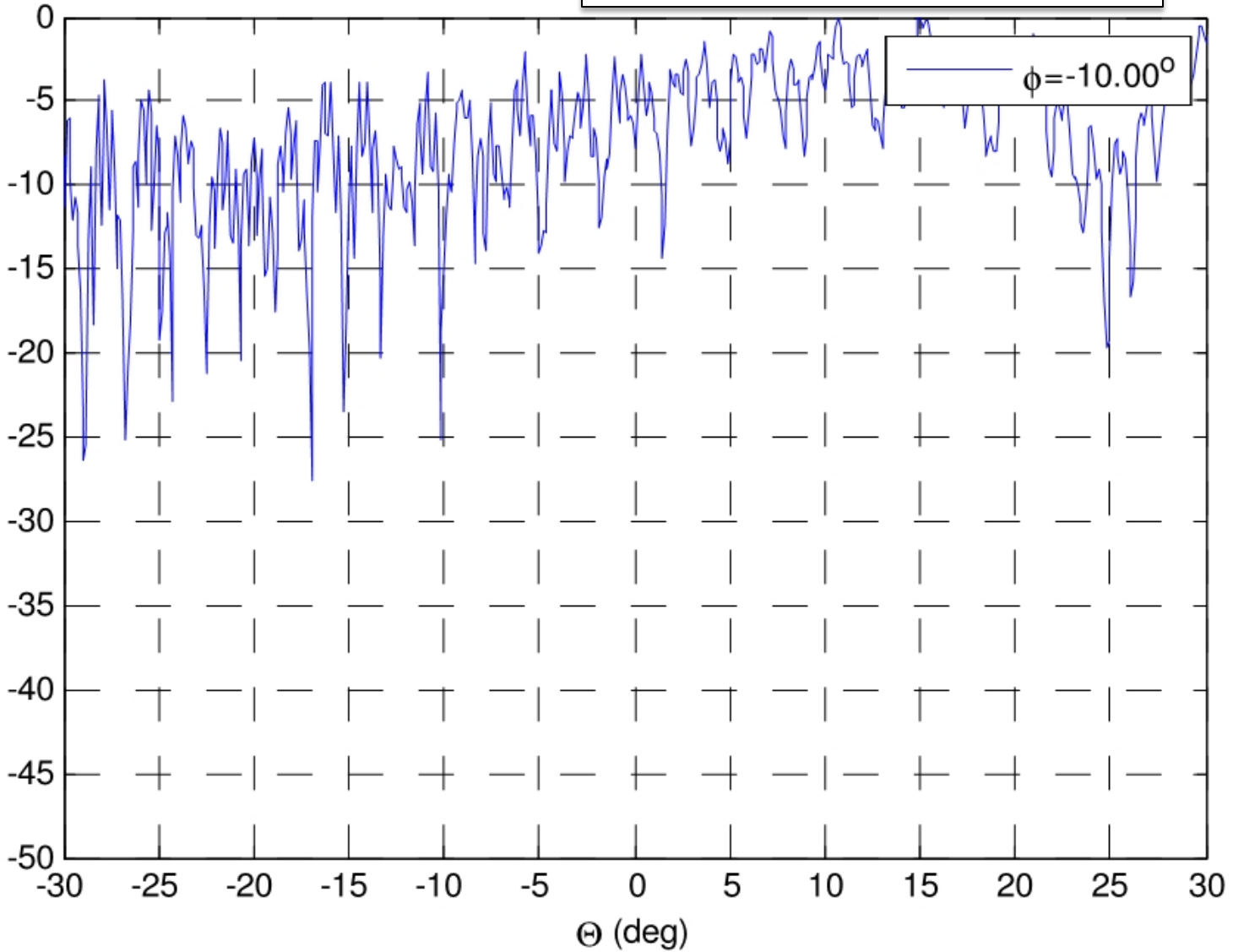


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp--10.cut,

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

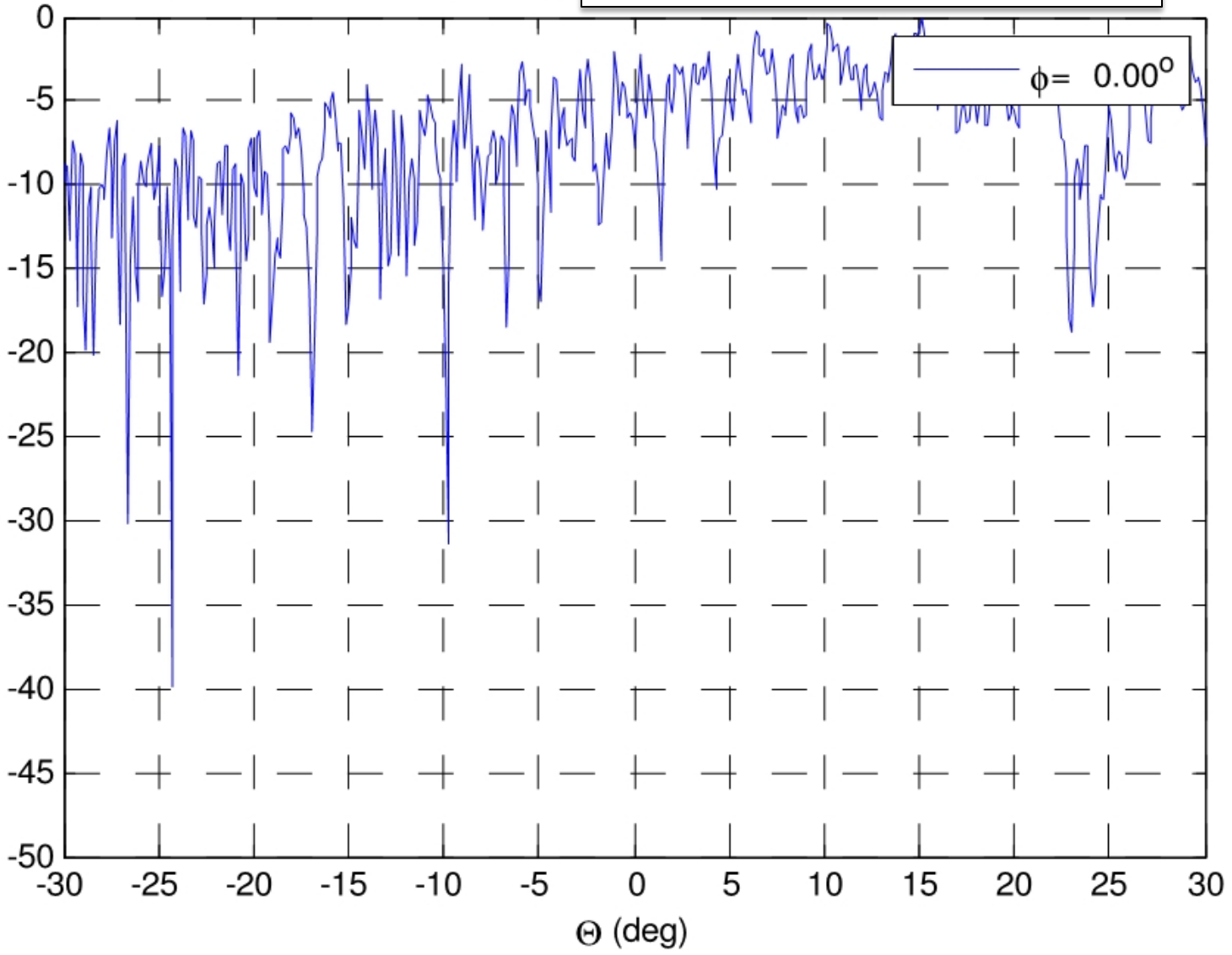


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp-0.cut, F

Peak Off-axis Gain = -25.0 dBi

Off-axis Gain Below Peak (dBi)

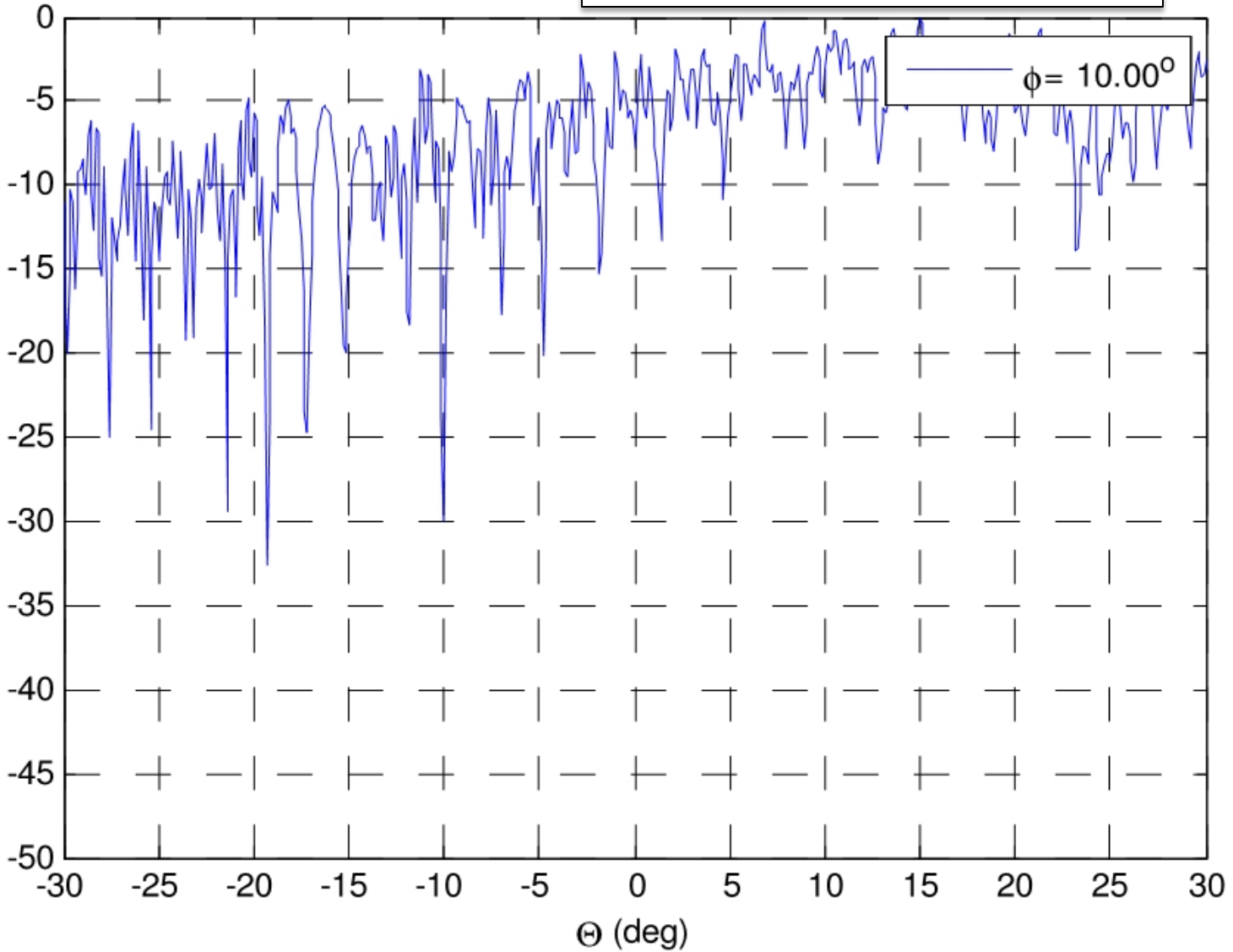


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp-10.cut,

Peak Off-axis Gain = -24.9 dBi

Off-axis Gain Below Peak (dBi)

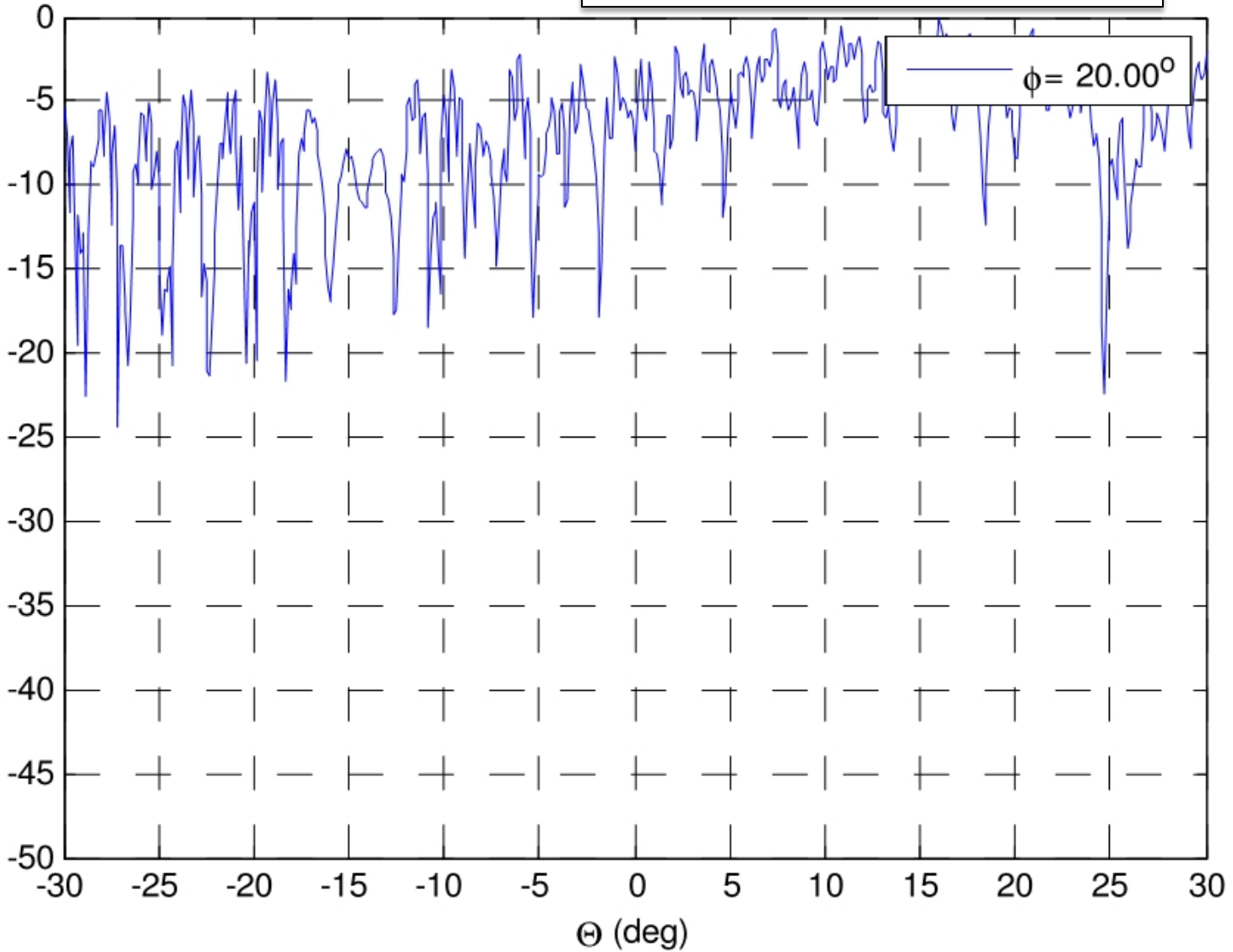


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp-20.cut,

Peak Off-axis Gain = -24.9 dBi

Off-axis Gain Below Peak (dBi)

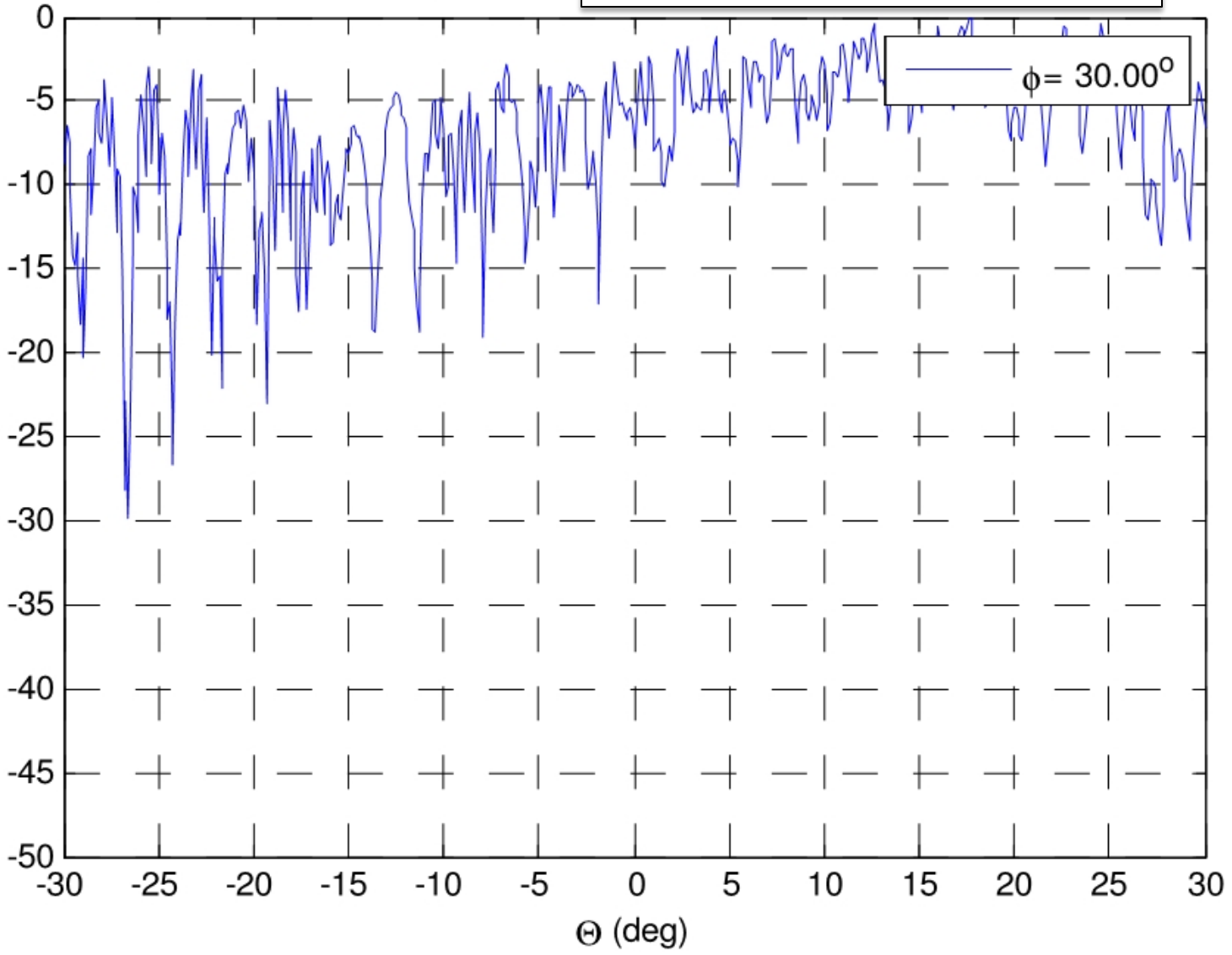


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp-30.cut,

Peak Off-axis Gain = -25.0 dBi

Off-axis Gain Below Peak (dBi)

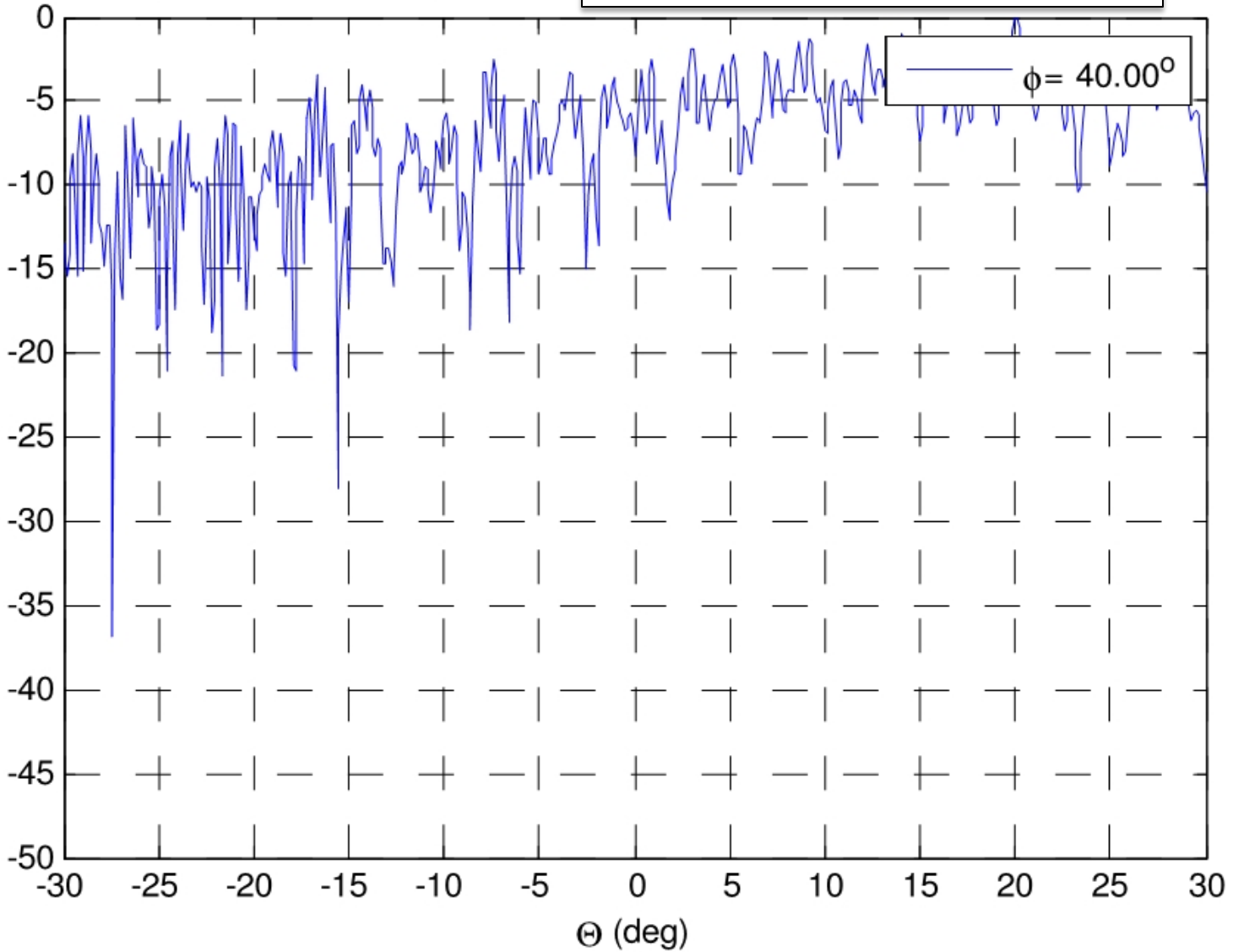


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp-40.cut,

Peak Off-axis Gain = -24.5 dBi

Off-axis Gain Below Peak (dBi)

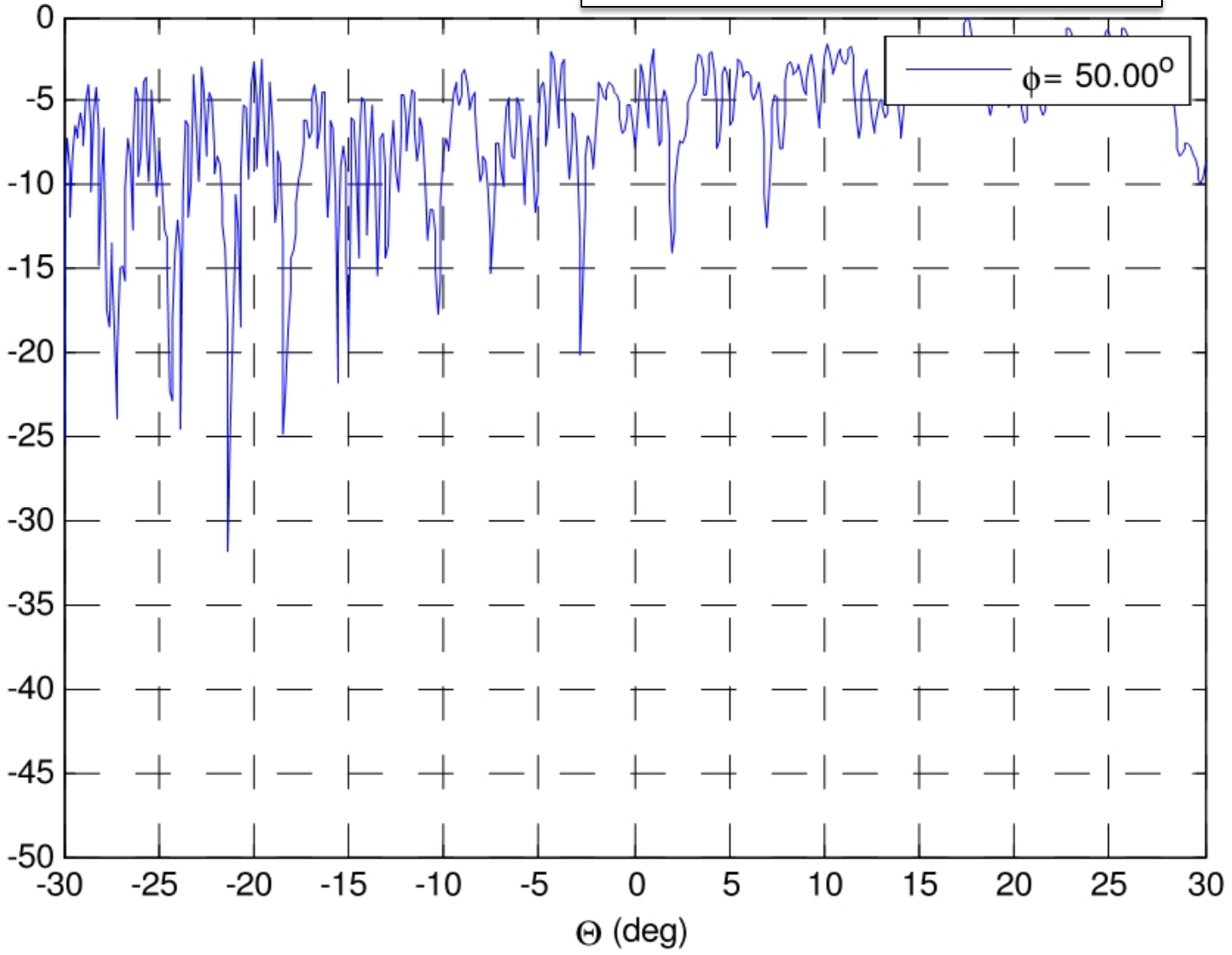


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp-50.cut,

Peak Off-axis Gain = -25.0 dBi

Off-axis Gain Below Peak (dBi)

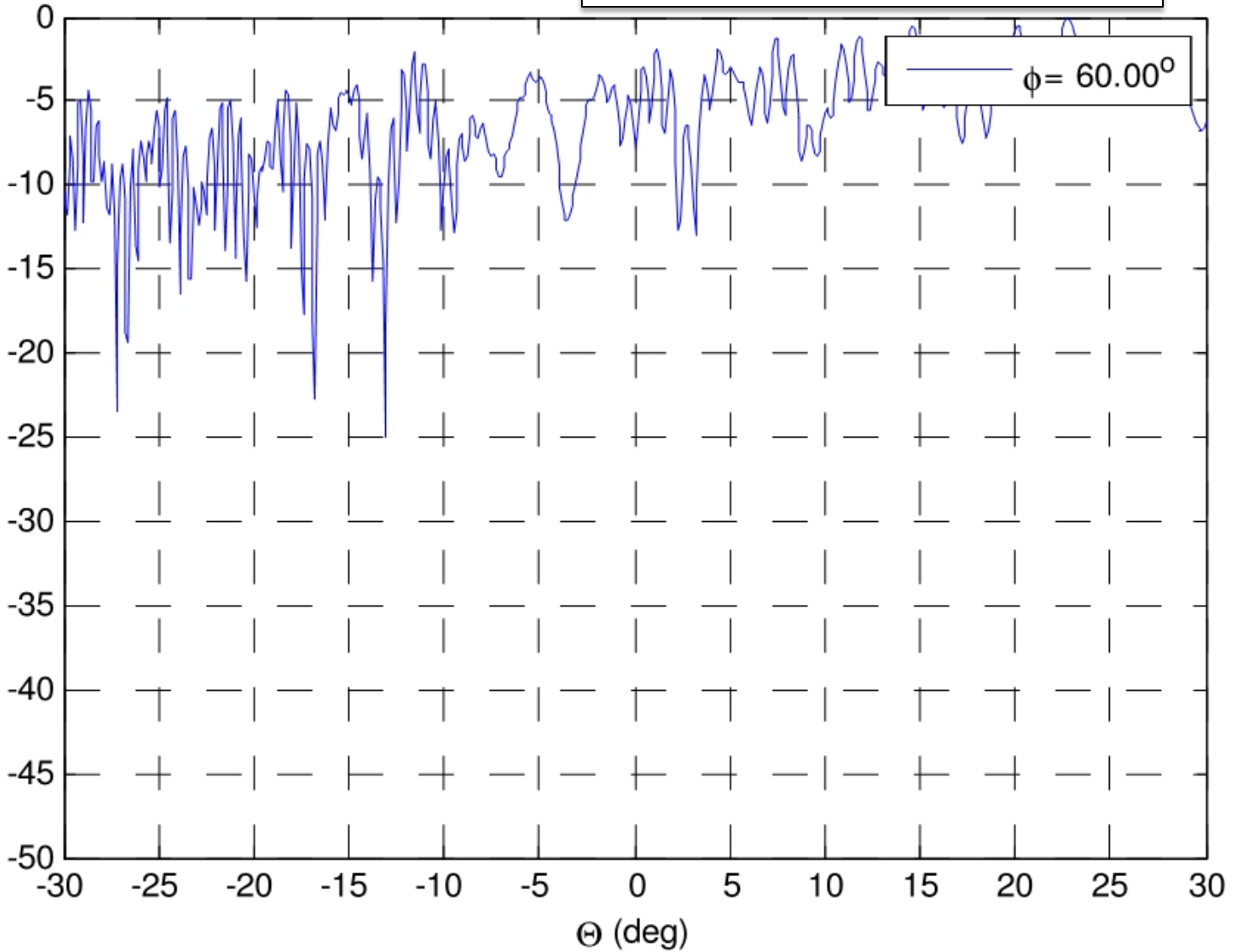


Normalized pattern cuts - farfield

Input file: tx-17.7-rhcp-60.cut,

Peak Off-axis Gain = -25.1 dBi

Off-axis Gain Below Peak (dBi)



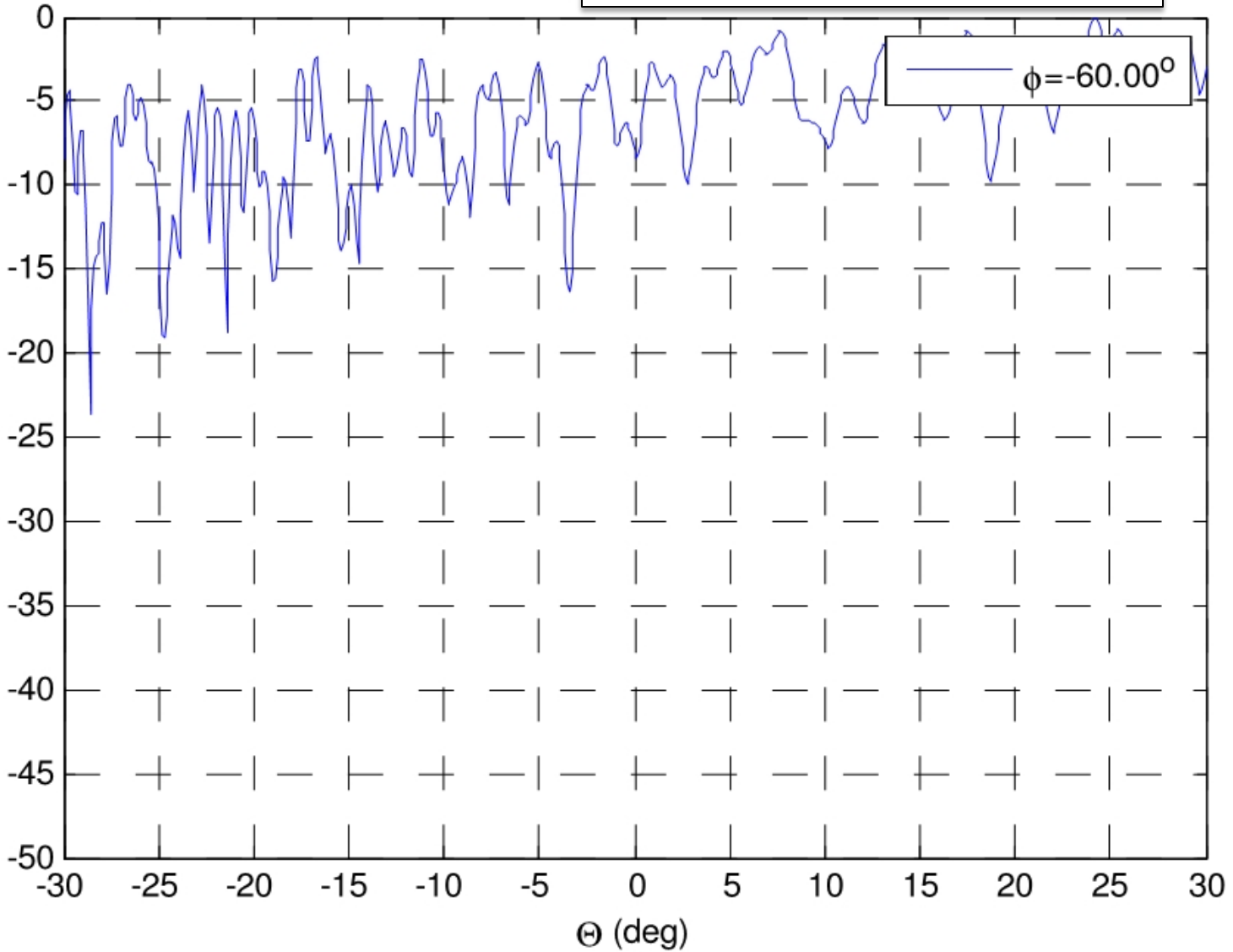
LHCP = 17.695 GHz

Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp--60.cut,

Peak Off-axis Gain = -25.1 dBi

Off-axis Gain Below Peak (dBi)

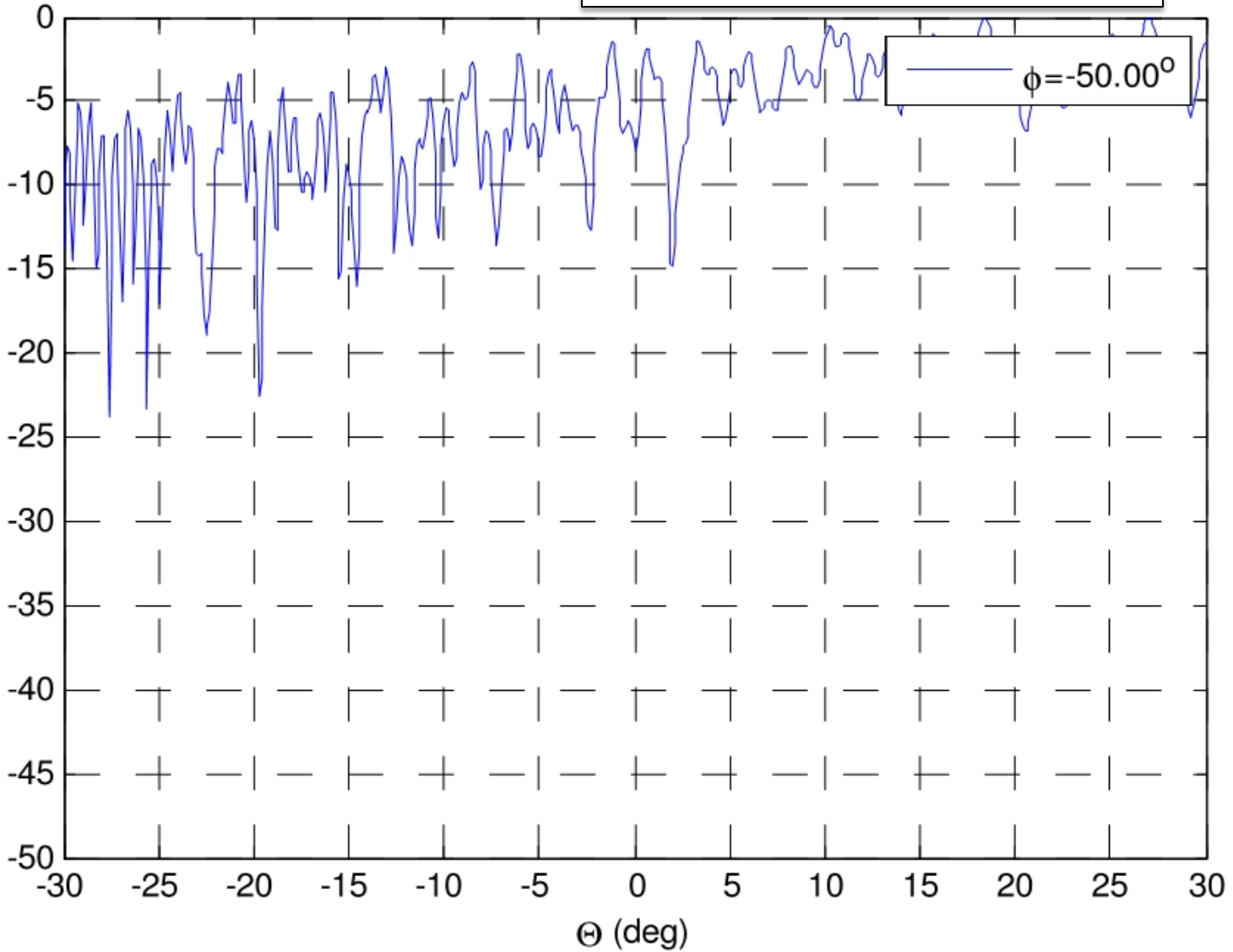


Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp--50.cut,

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

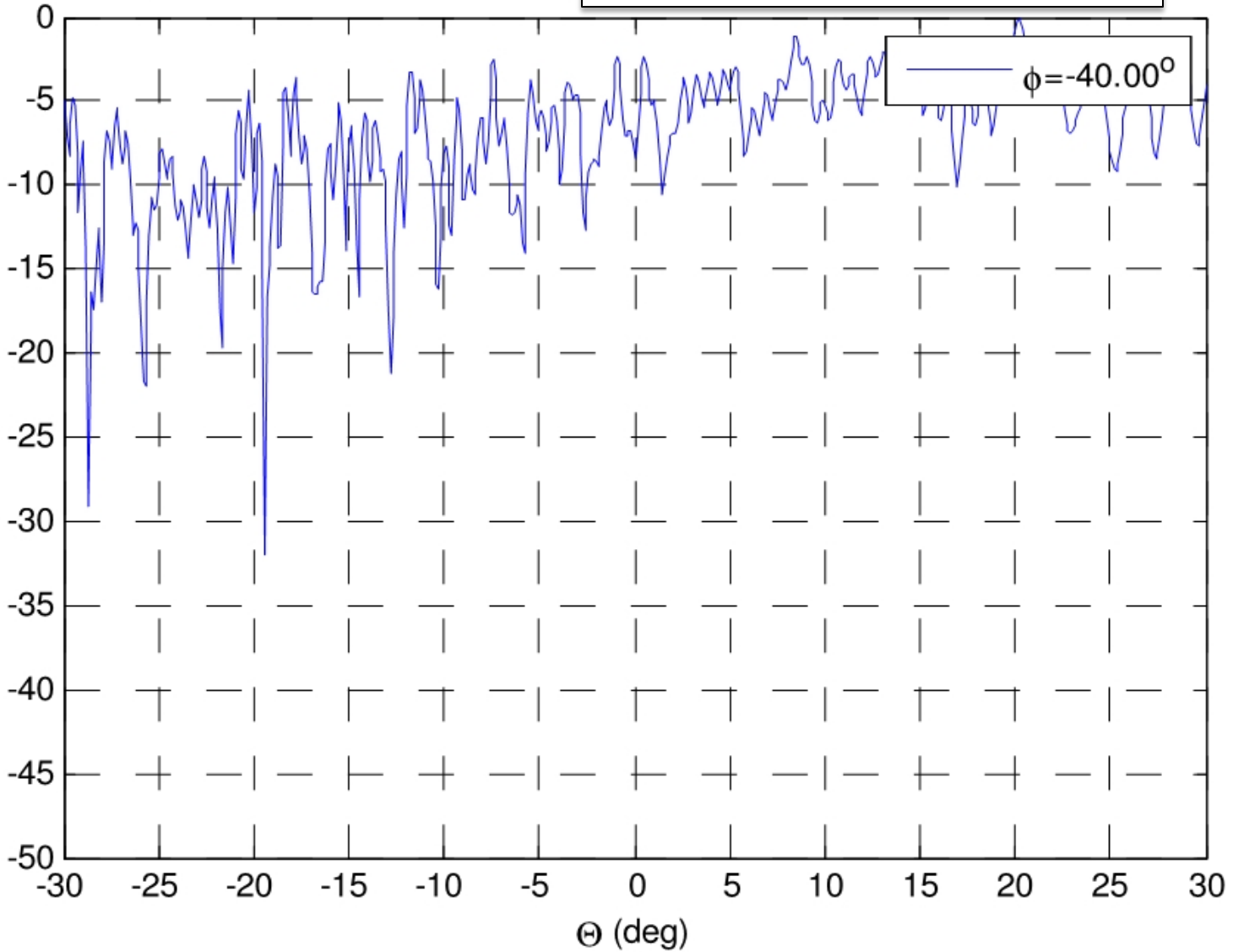


Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp--40.cut,

Peak Off-axis Gain = -24.7 dBi

Off-axis Gain Below Peak (dBi)

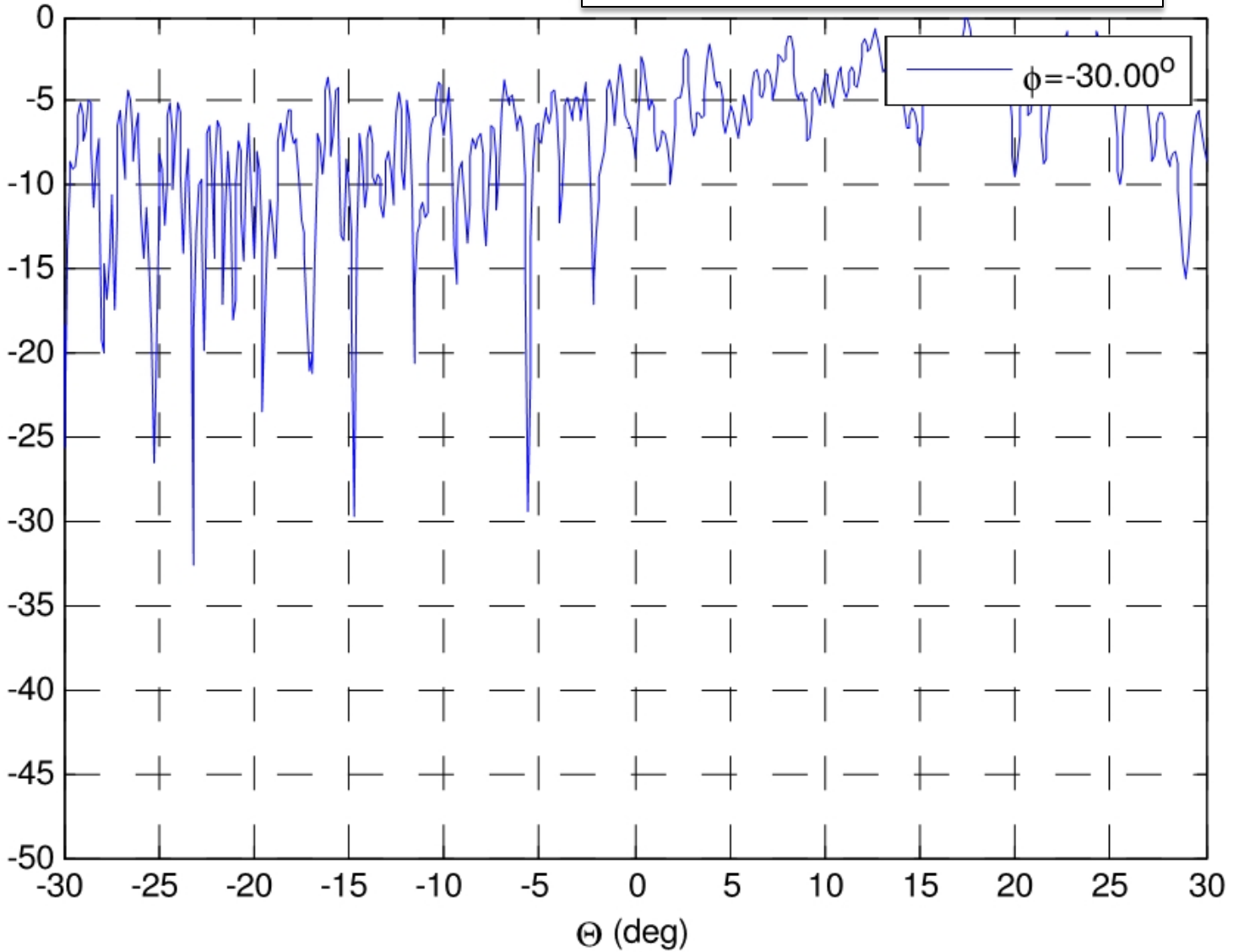


Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp--30.cut,

Peak Off-axis Gain = -24.8 dBi

Off-axis Gain Below Peak (dBi)

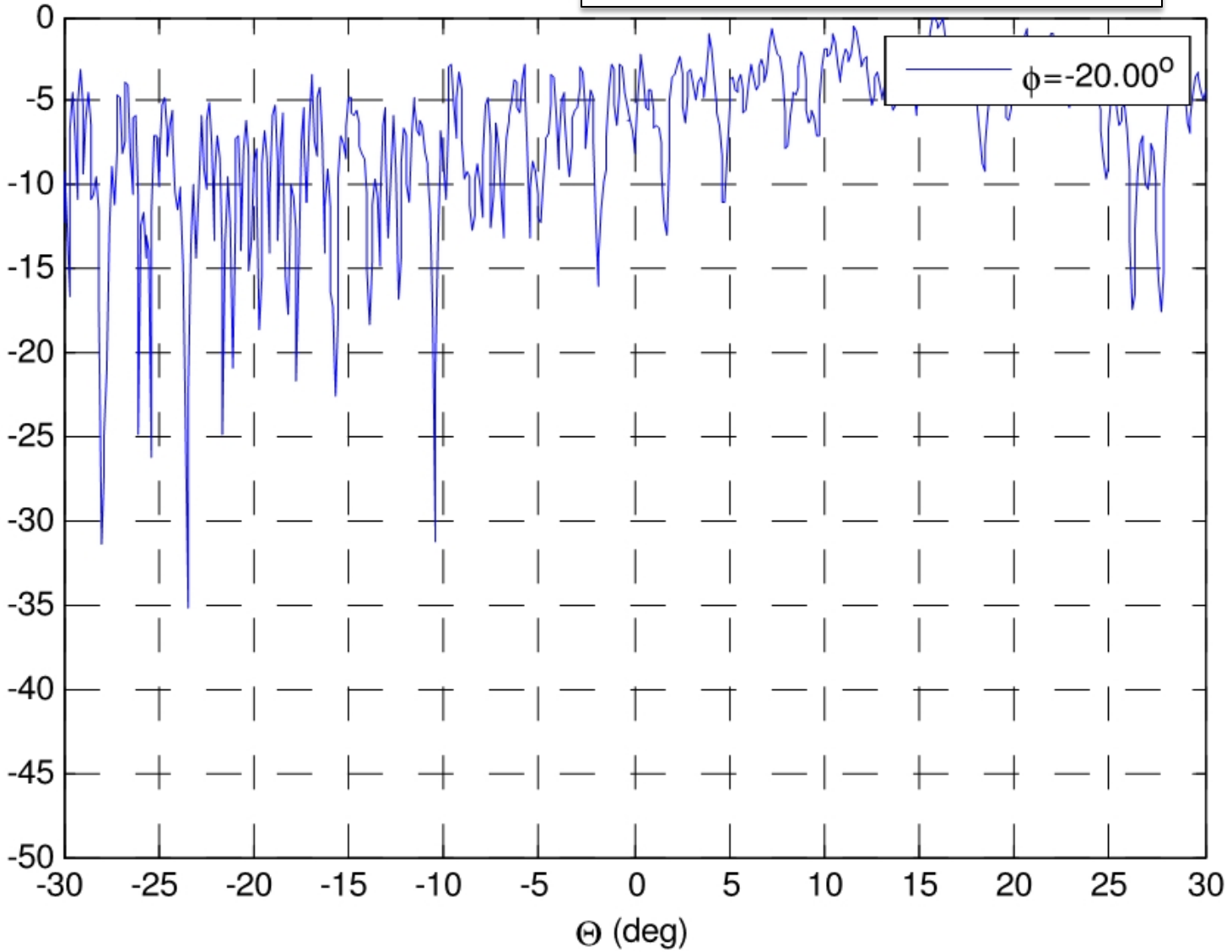


Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp--20.cut,

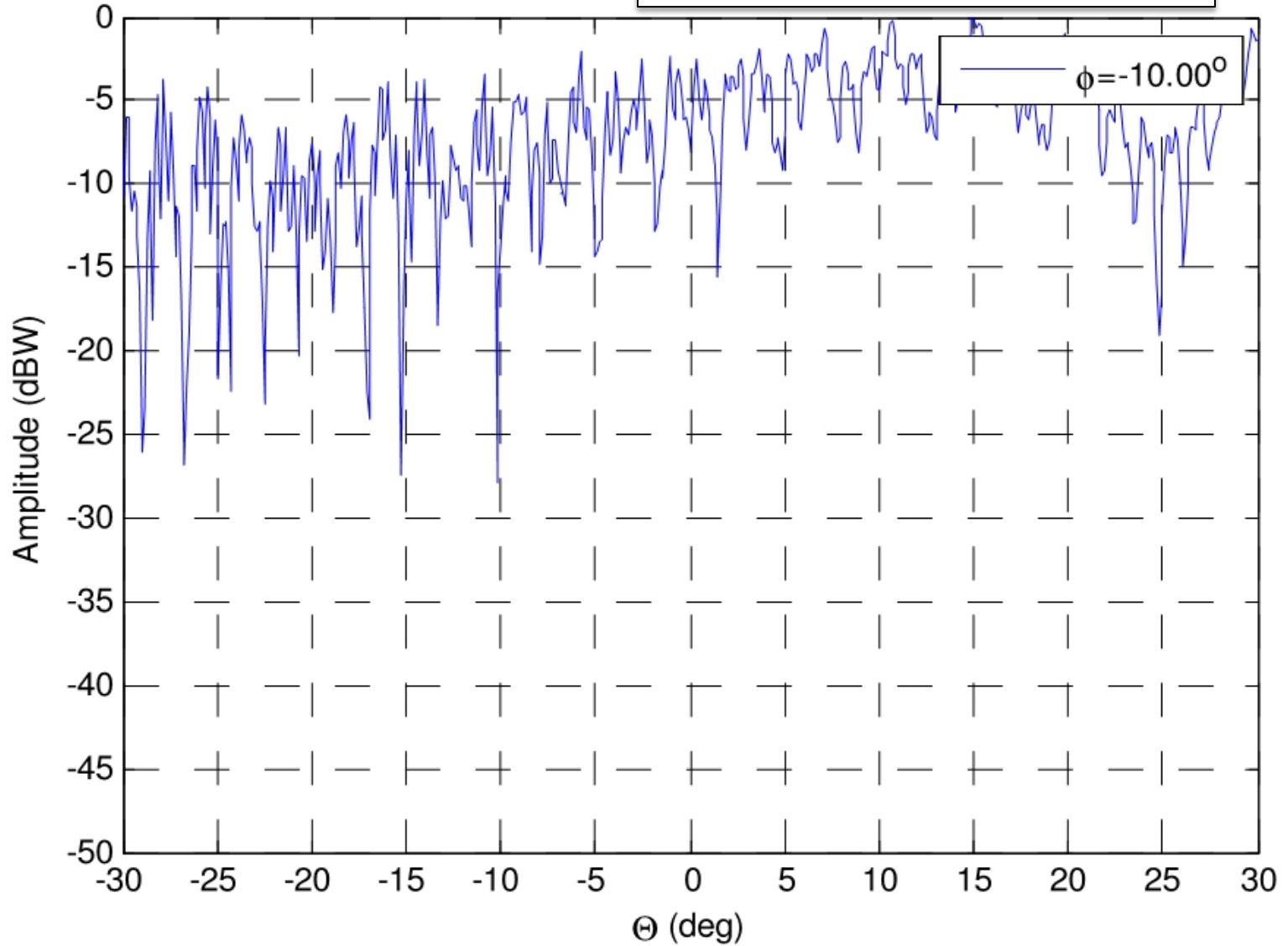
Peak Off-axis Gain = -25.1 dBi

Off-axis Gain Below Peak (dBi)



Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp--10.cut, Peak Off-axis Gain = -25.0 dBi

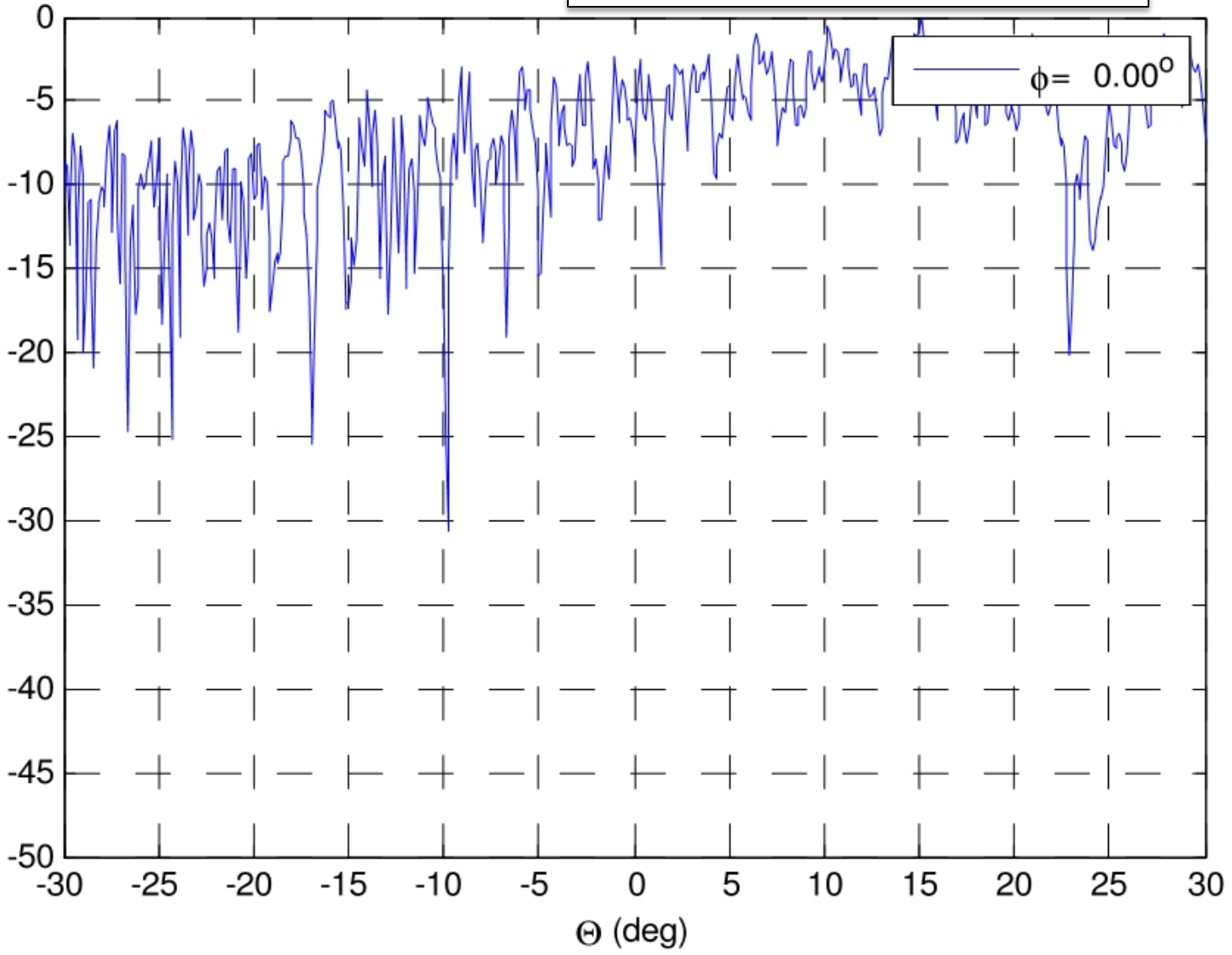


Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp-0.cut,

Peak Off-axis Gain = -24.8 dBi

Off-axis Gain Below Peak (dBi)

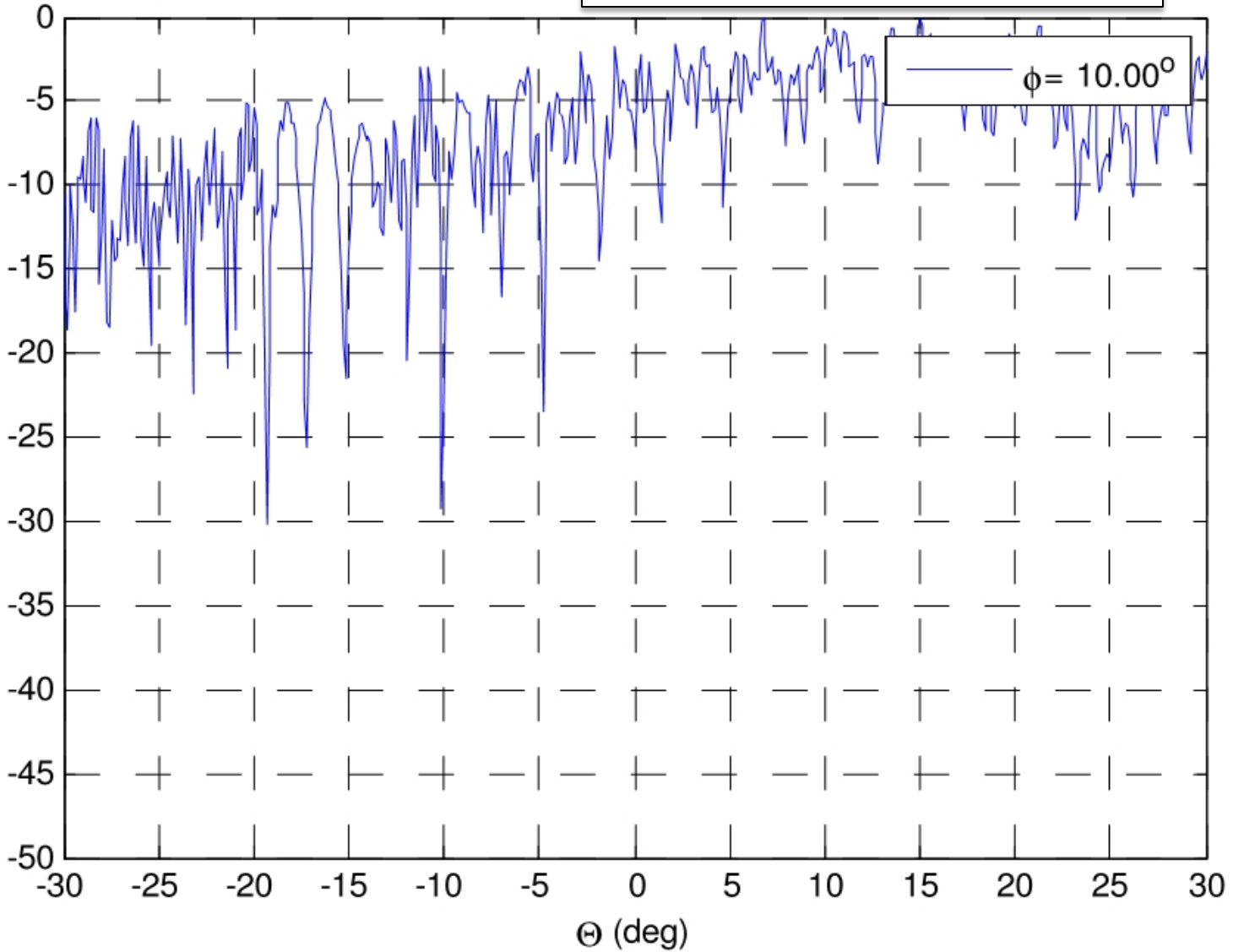


Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp-10.cut,

Peak Off-axis Gain = -25.3 dBi

Off-axis Gain Below Peak (dBi)

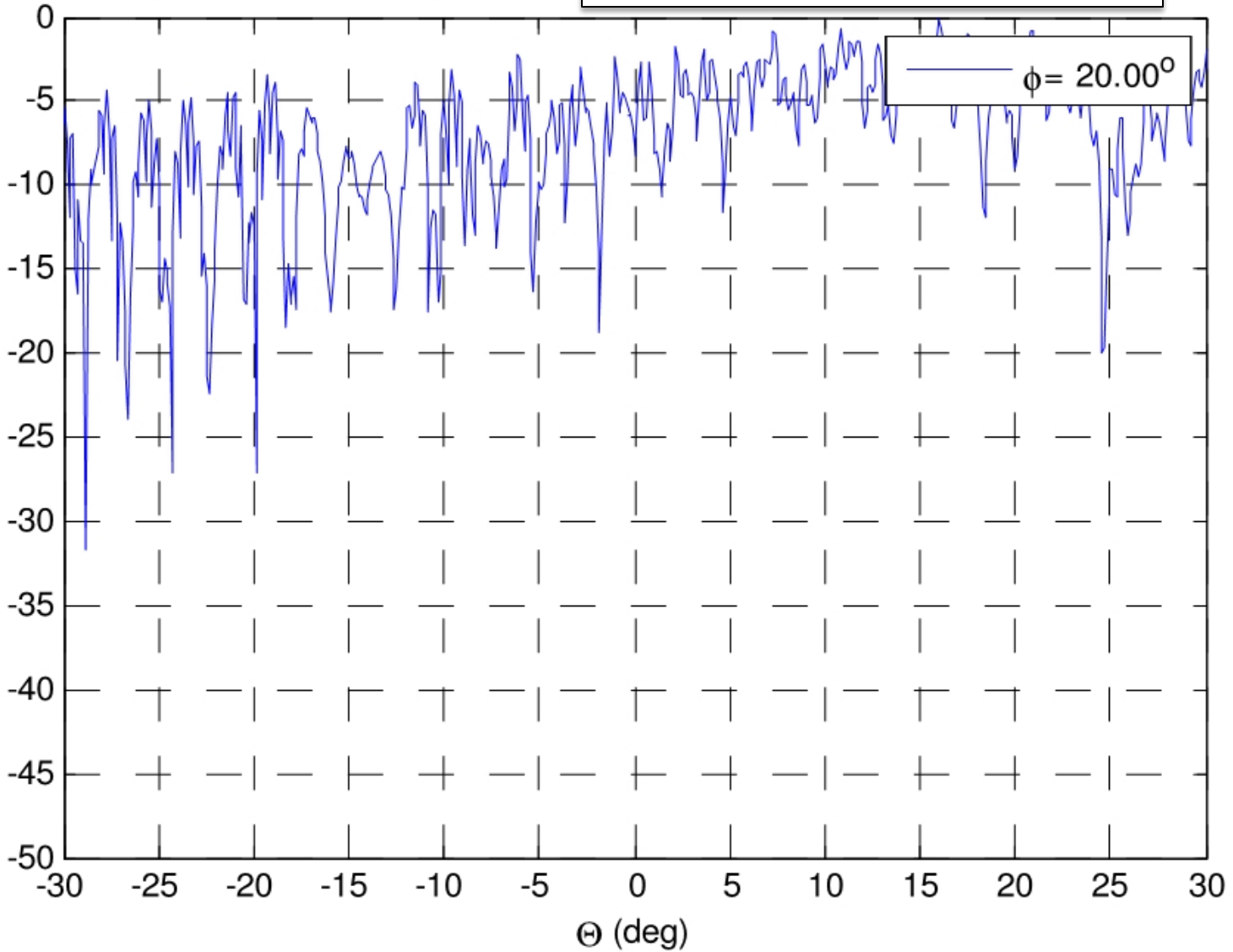


Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp-20.cut,

Peak Off-axis Gain = -24.6 dBi

Off-axis Gain Below Peak (dBi)

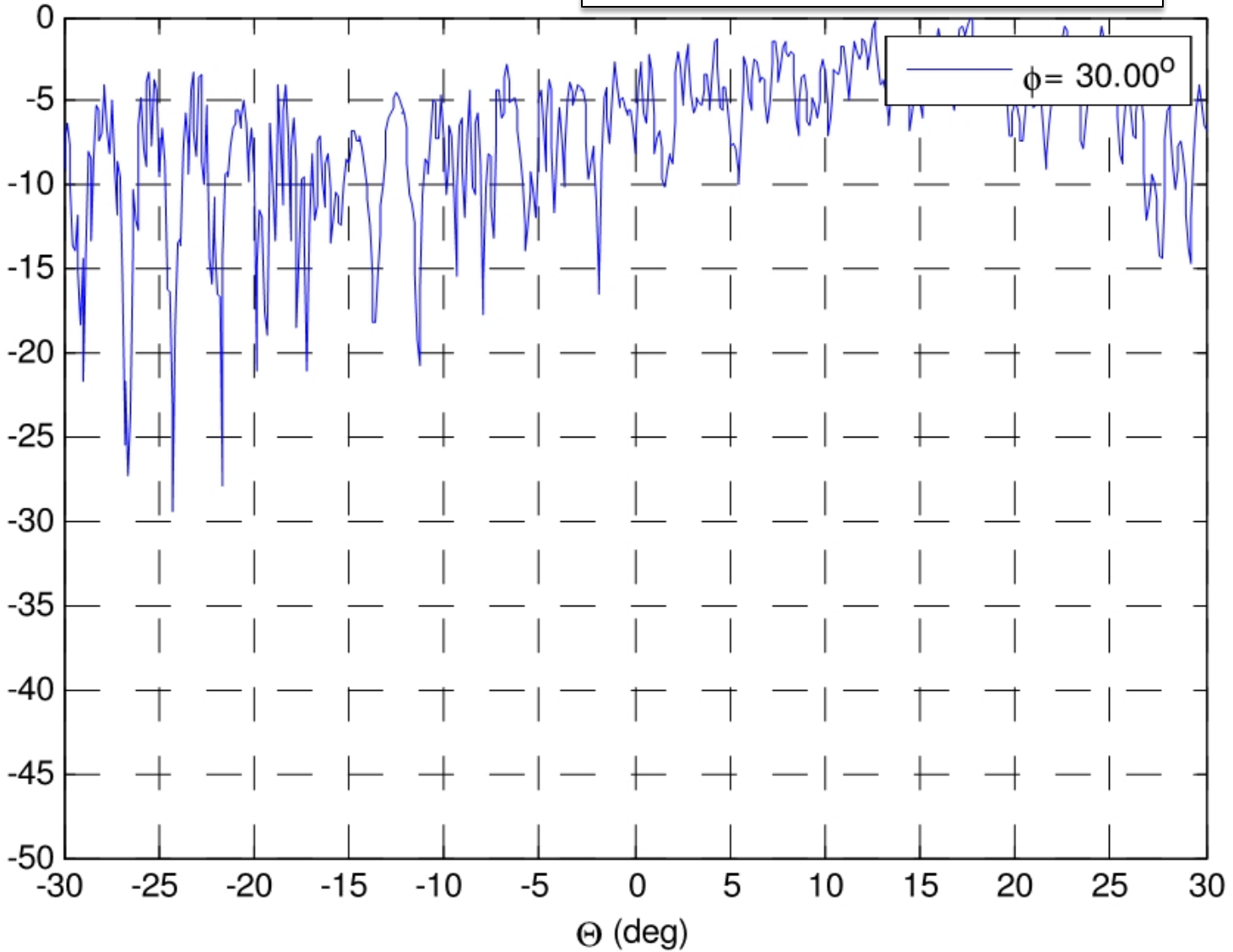


Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp-30.cut,

Peak Off-axis Gain = -25.0 dBi

Off-axis Gain Below Peak (dBi)

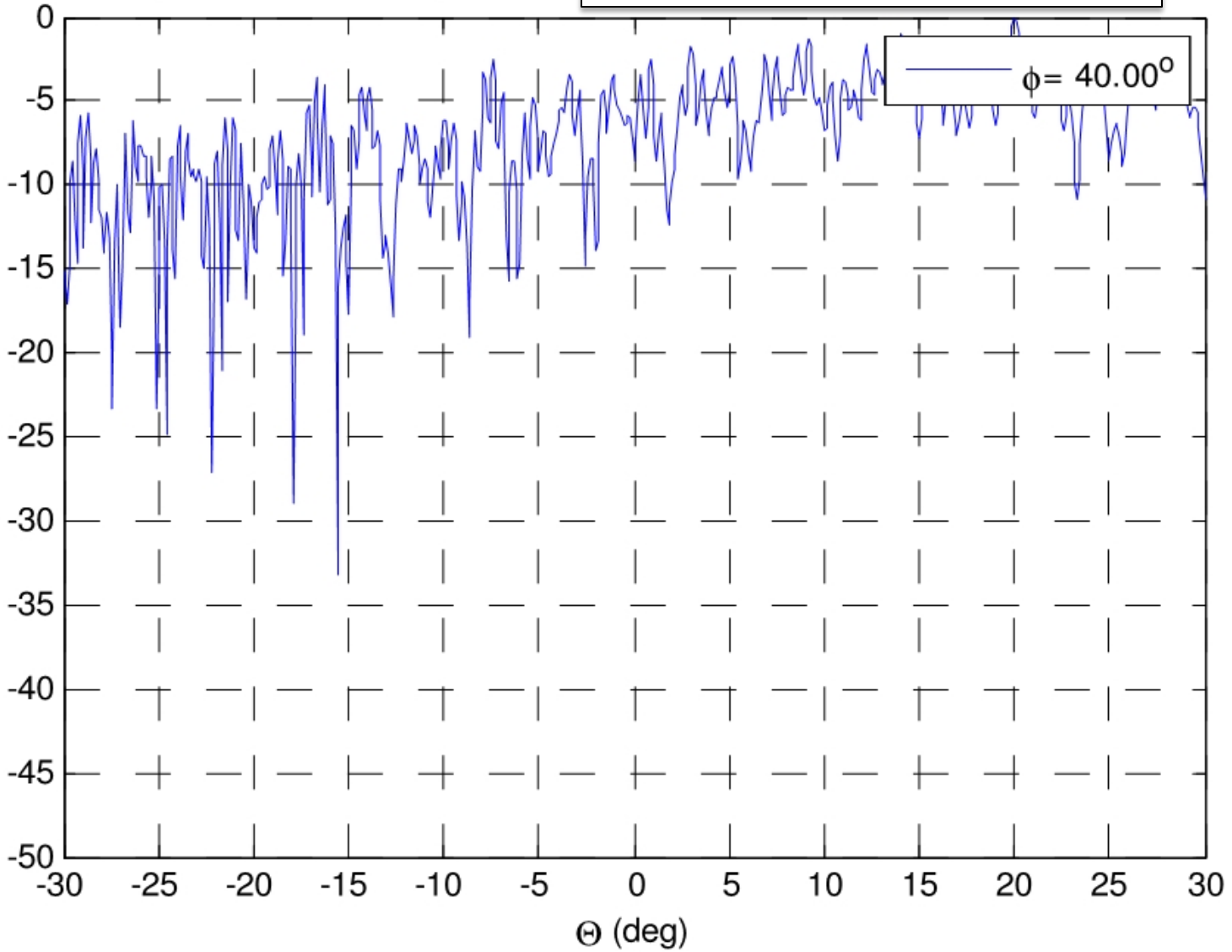


Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp-40.cut,

Peak Off-axis Gain = -24.5 dBi

Off-axis Gain Below Peak (dBi)

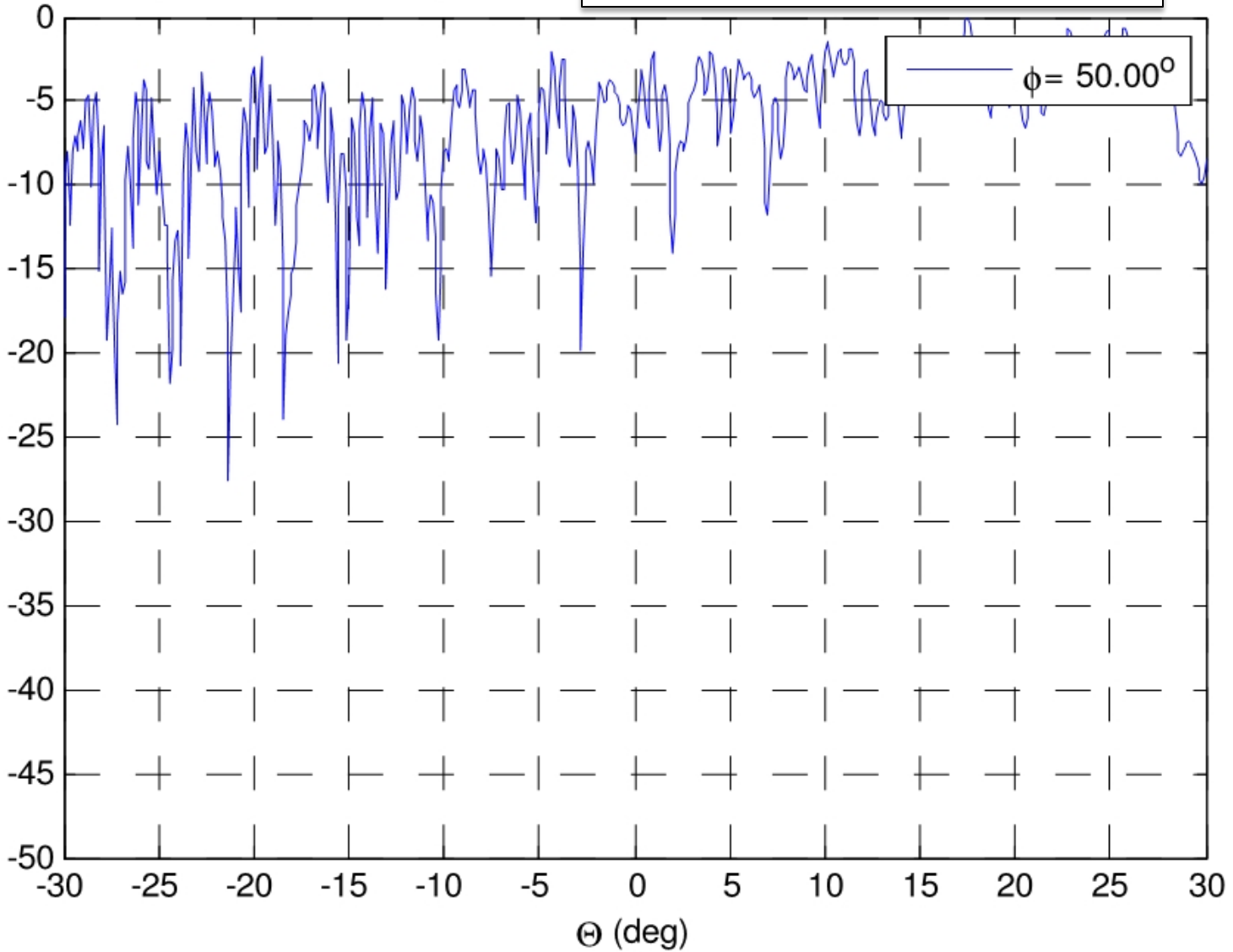


Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp-50.cut,

Peak Off-axis Gain = -24.9 dBi

Off-axis Gain Below Peak (dBi)



Normalized pattern cuts - farfield

Input file: tx-17.7-lhcp-60.cut,

Peak Off-axis Gain = -25.0 dBi

Off-axis Gain Below Peak (dBi)

