

**BSSNET2A-111W 17BSS**  
**Off-Axis Antenna Plots**

<b>CONUS BEAM</b>	
Satellite Location <sup>o</sup> WL	-110.90
Nearest DBS Satellite Location <sup>o</sup> WL	-110.20
Miniumum Spacing (w/Station Keeping @+--0.05)	-0.60
Max PFD Flux Density, -117 dBW/m <sup>2</sup> /100 kHz	-117.0
Channel Bandwidth, MHz	24.0
Effective Bandwidth, dB-100 kHz	23.8
PFD Flux Density Allowed per Channel, dBW/m <sup>2</sup>	-93.2
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 <sup>2</sup>	-123.9
Atmospheric loss, dB	0
Maximum EIRP Allowed at Minimum Separation, dBW	30.7
Peak Satellite EIRP, dBW <sup>2</sup>	60.2
Boresight Antenna Gain, dB <sup>3</sup>	37.1
Tx Power into Antenna, dBW	23.1
Max Antenna Gain to Meet Space Path Spec, dB	7.6
Max Off-Axis EIRP from Plots <sup>4</sup> , dBW	5.38
Max Antenna Gain from Plots, dB	-17.72
PFD / Ant Gain Margin, dB	25.3

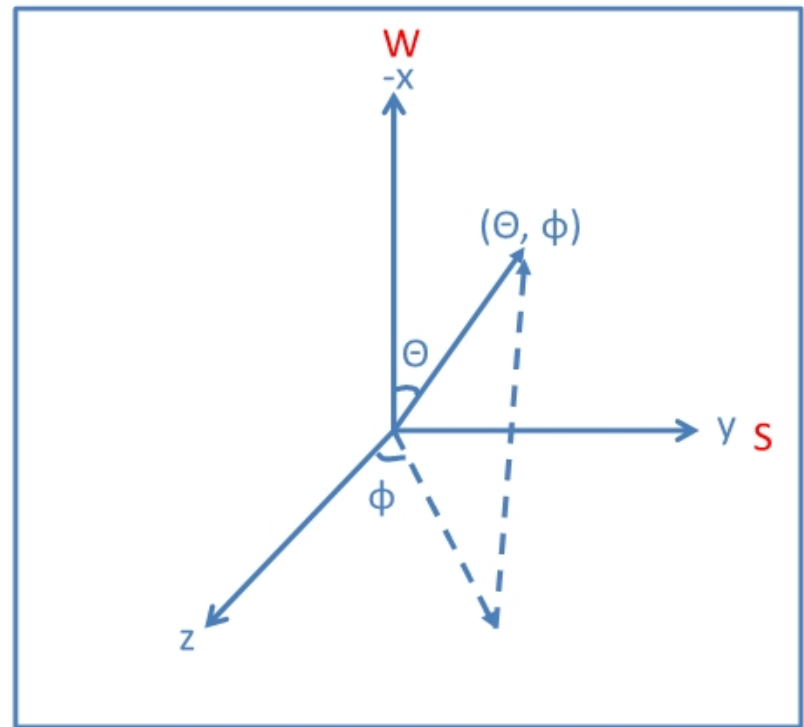
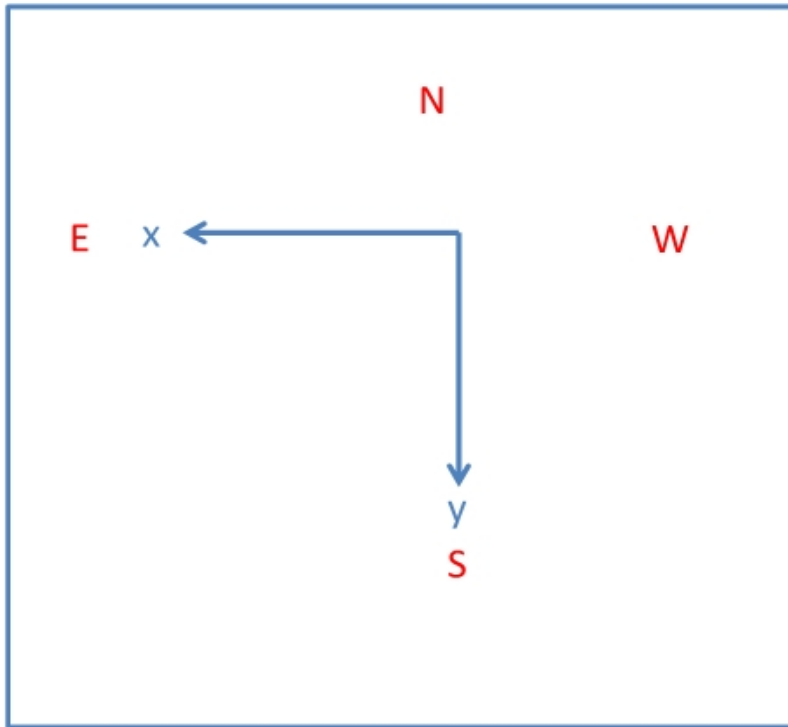
<sup>1</sup> As defined in FCC Section 25.264(a)

<sup>2</sup> from Schedule S7  
temperature and life]

<sup>3</sup> from Schedule S7, column (c)

<sup>4</sup> 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 7.6 dBi level at  $0.6^\circ$  separation (>25 dB margin)



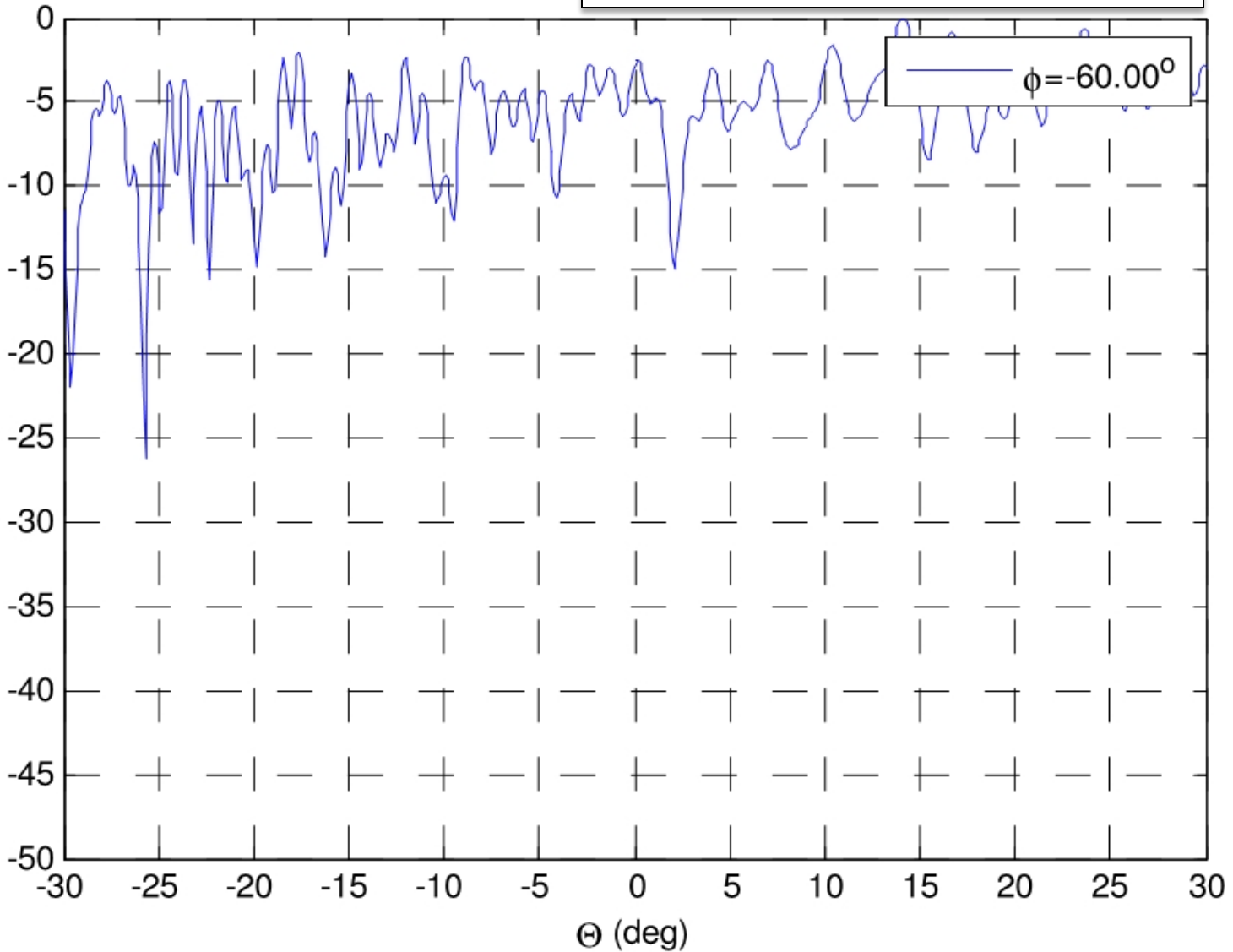
**RHCP = 17.305 GHz**

# 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)

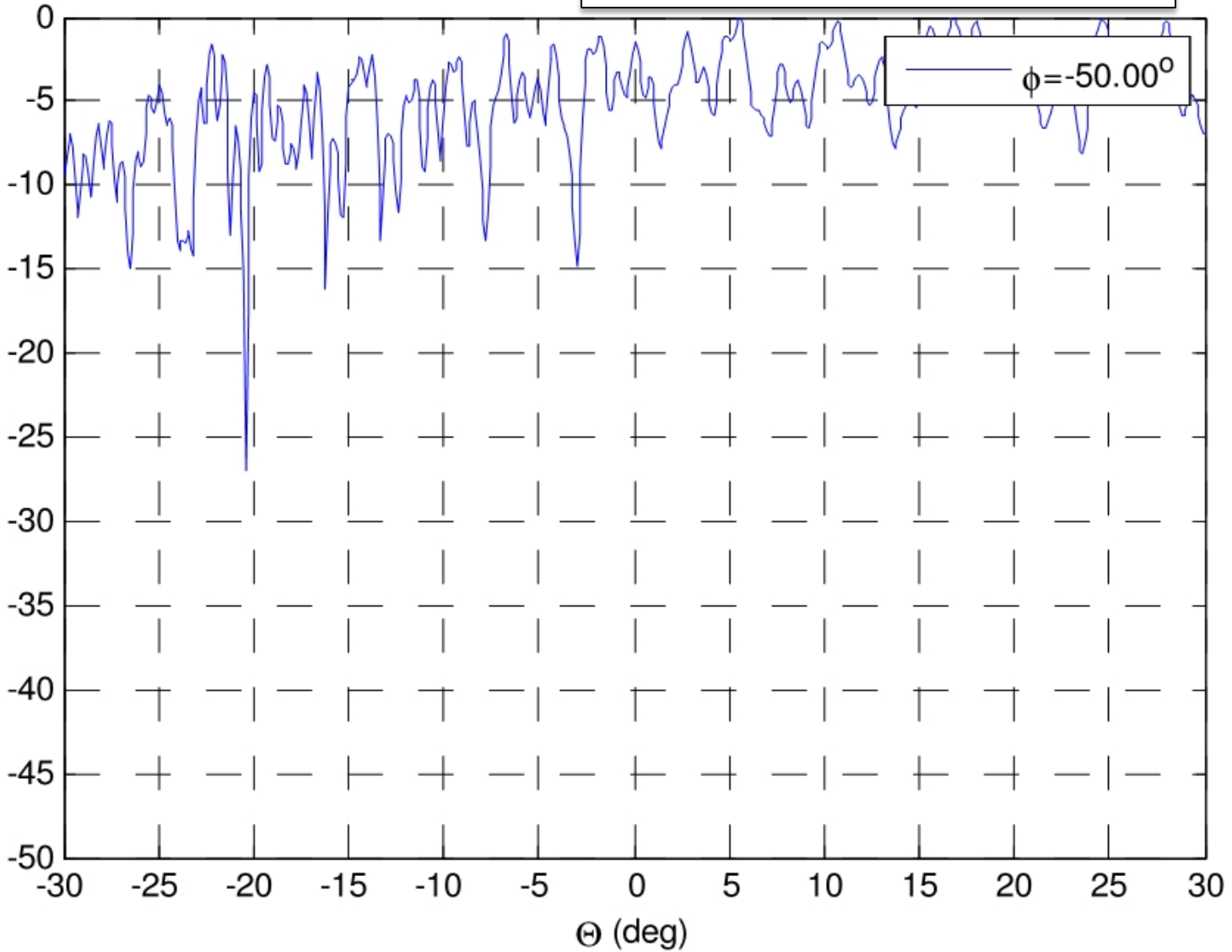


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -26.0 dBi

Off-axis Gain Below Peak (dBi)

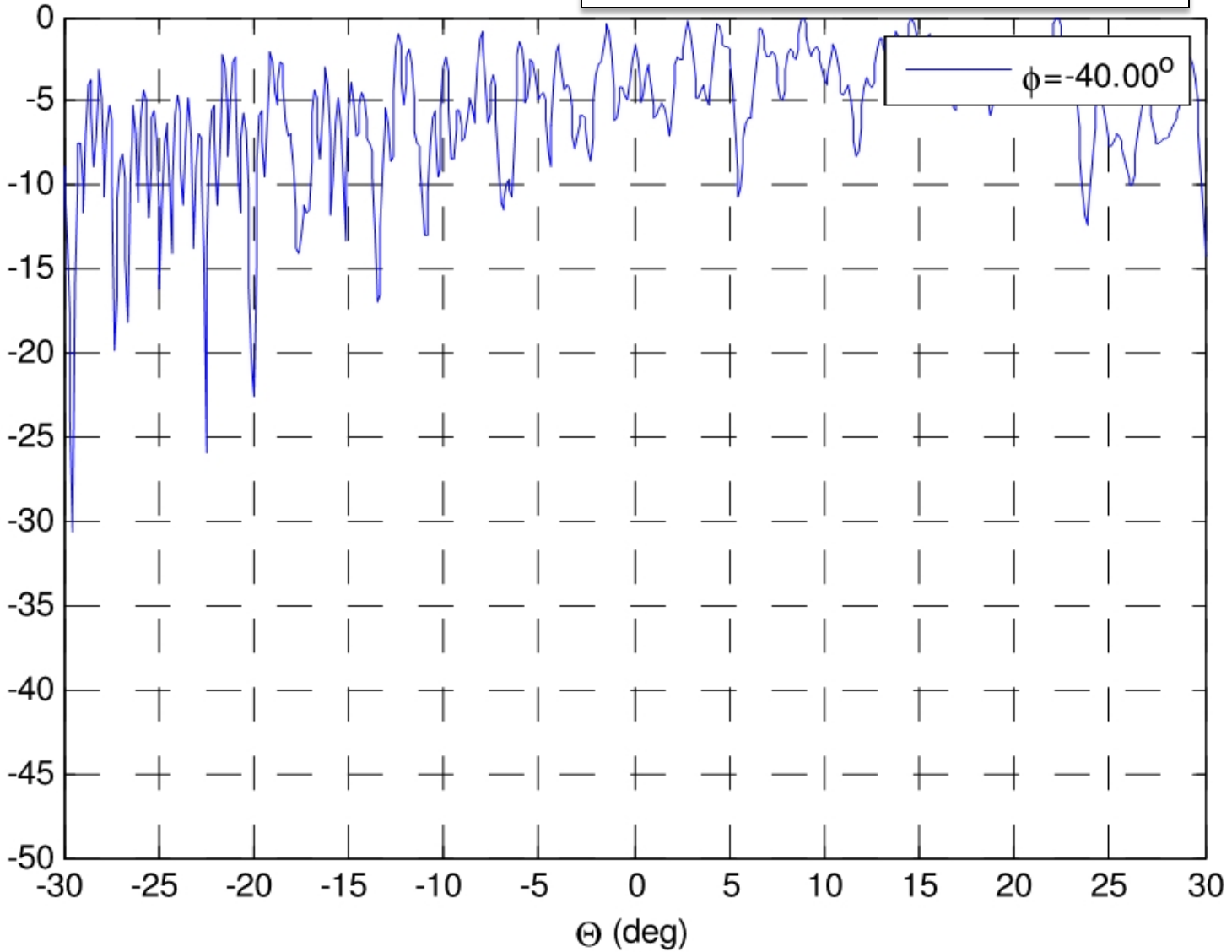


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.9 dBi

Off-axis Gain Below Peak (dBi)

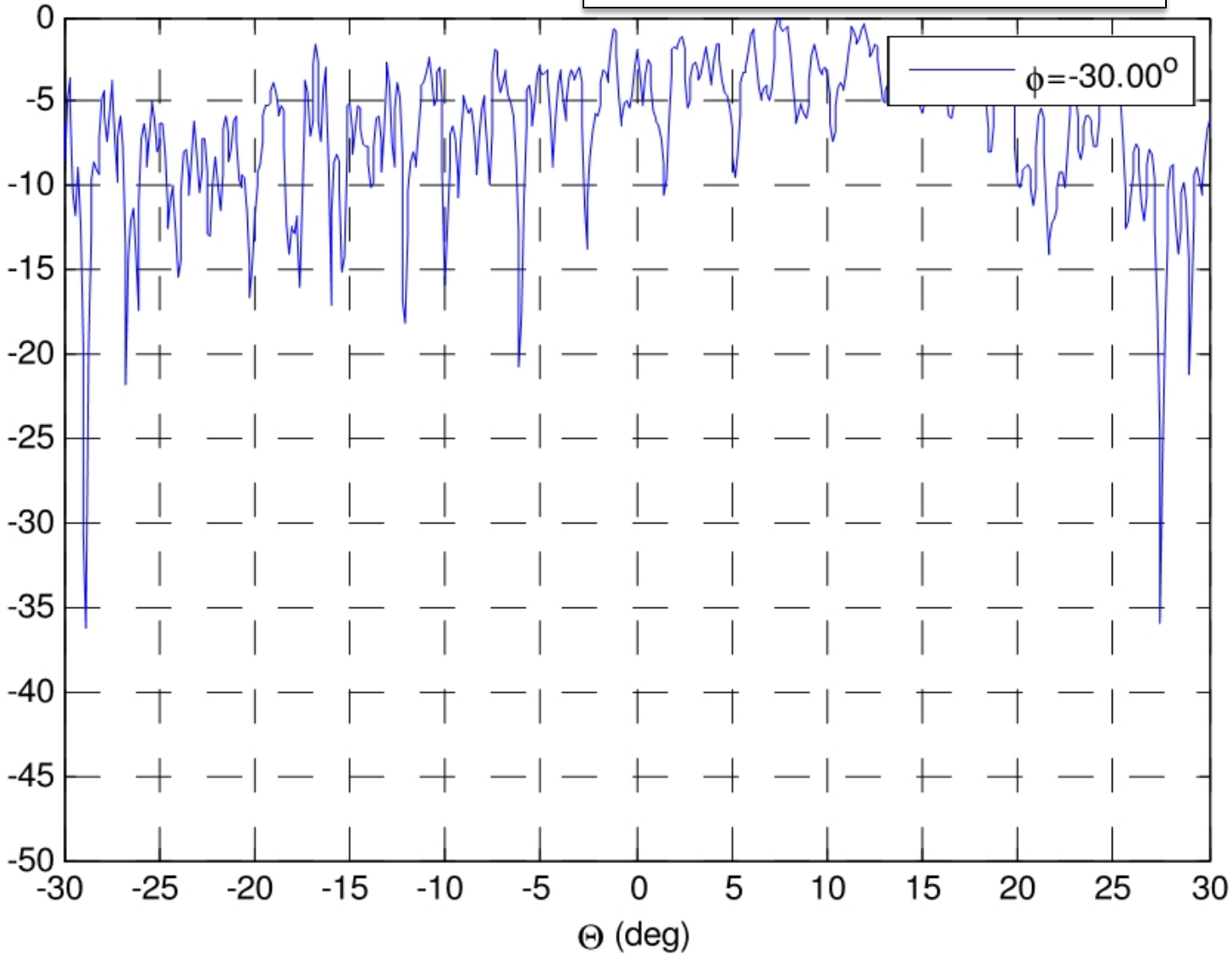


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

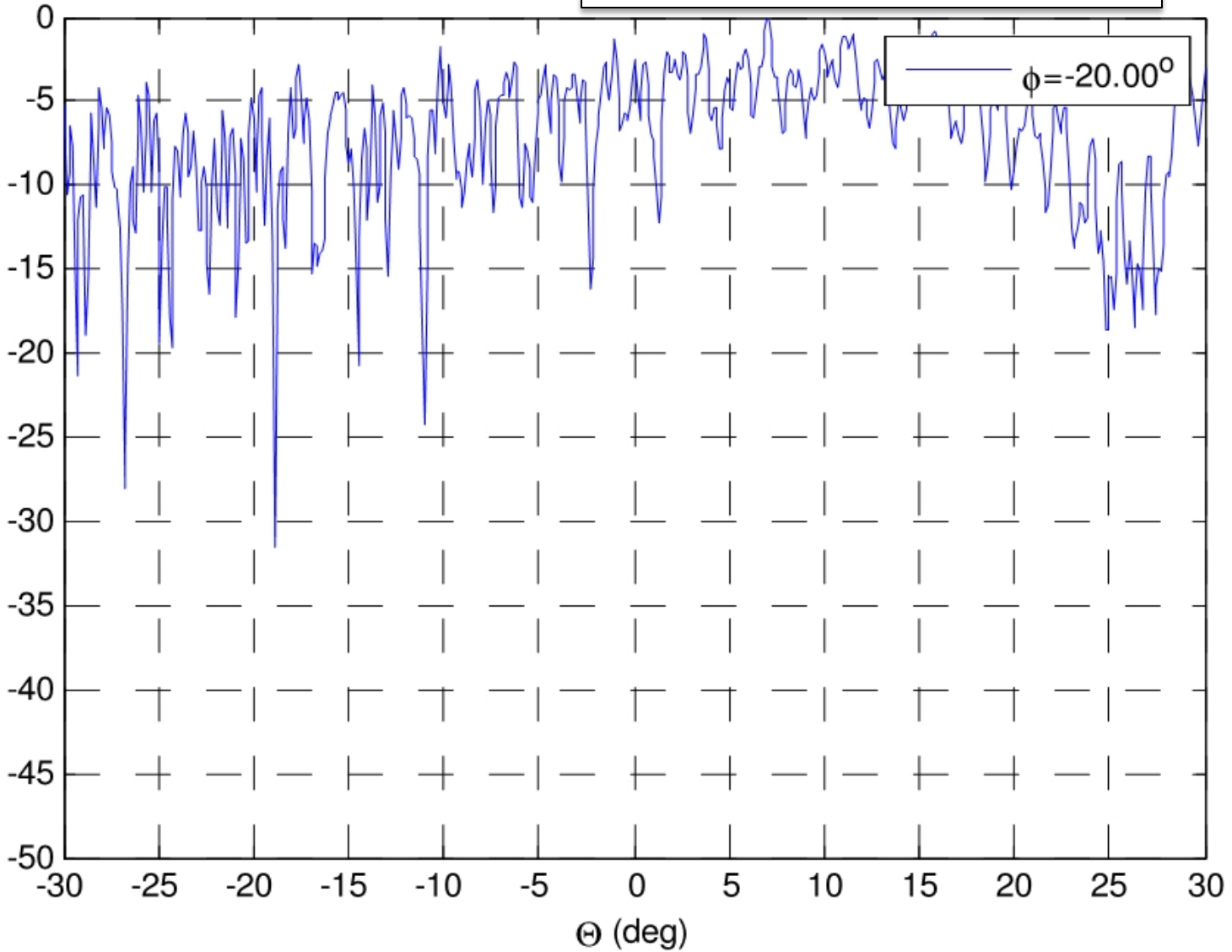


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

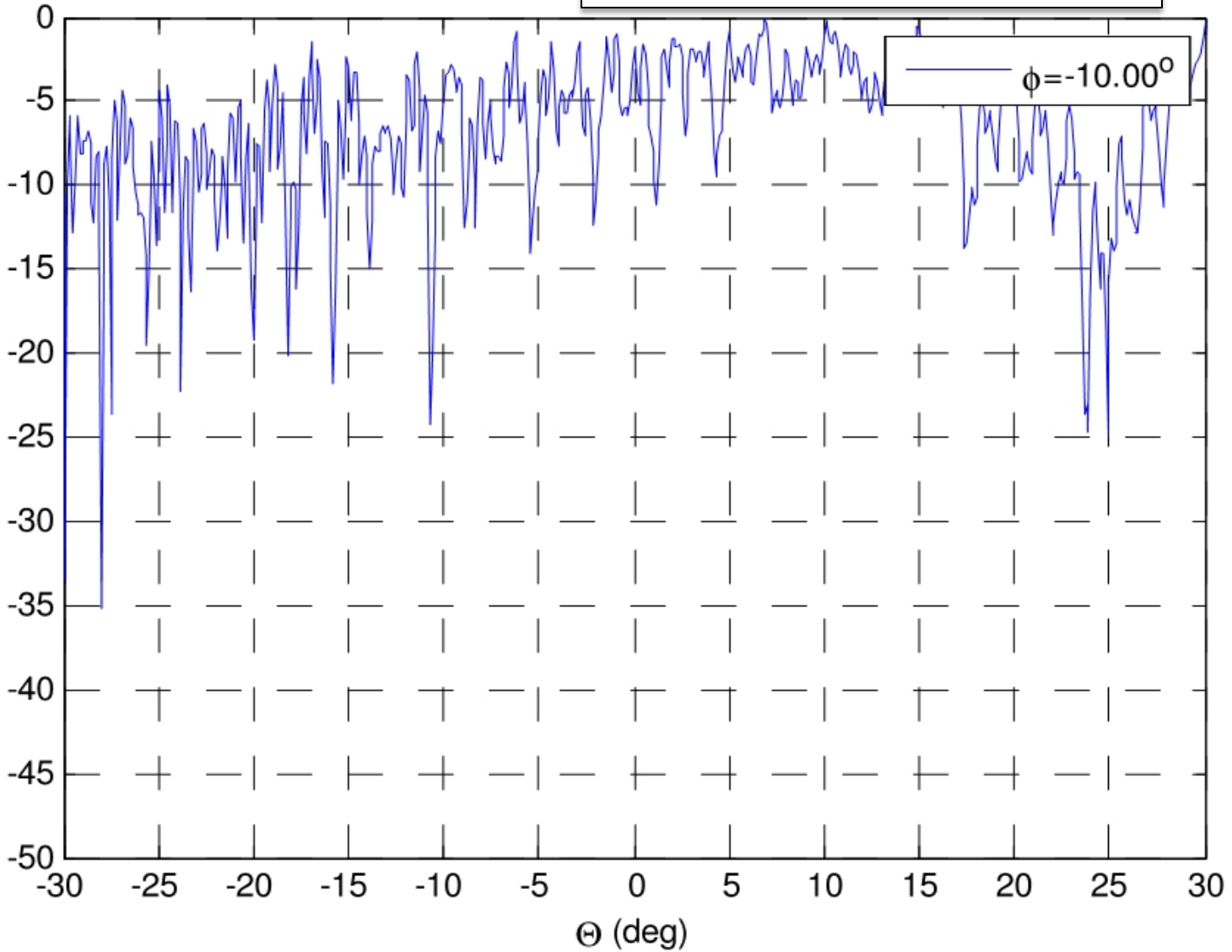


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.8 dBi

Off-axis Gain Below Peak (dBi)

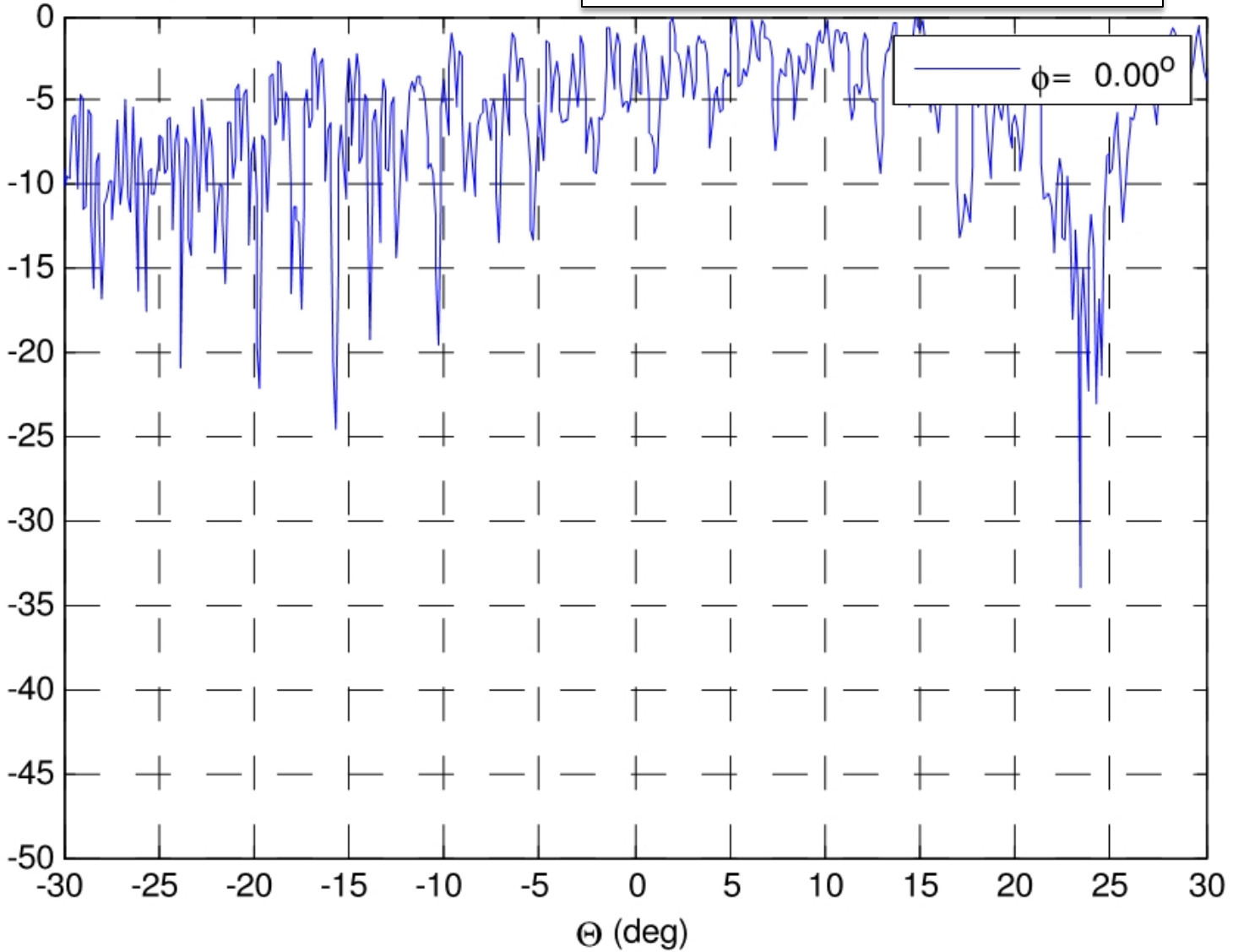


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -26.0 dBi

Off-axis Gain Below Peak (dBi)



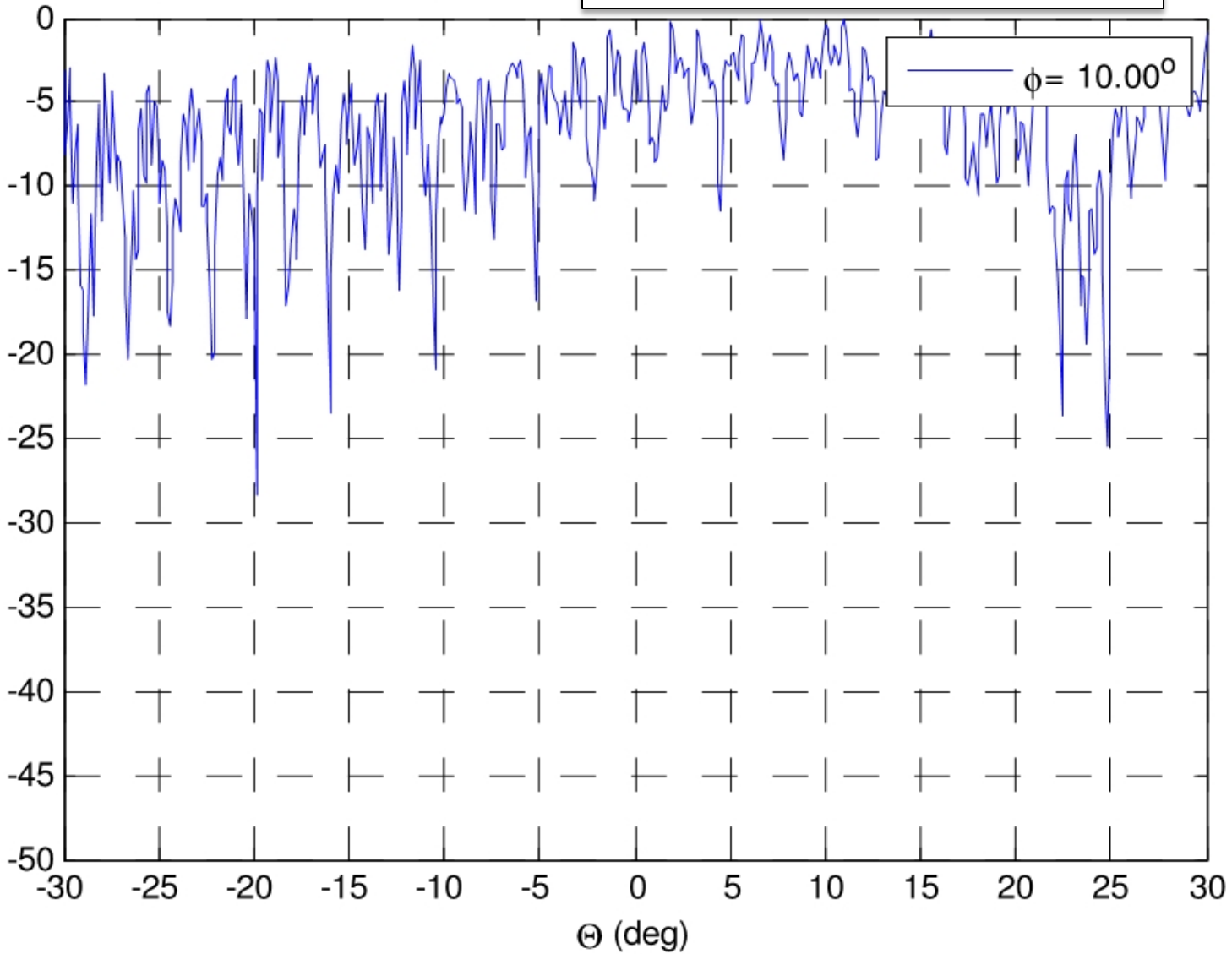


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

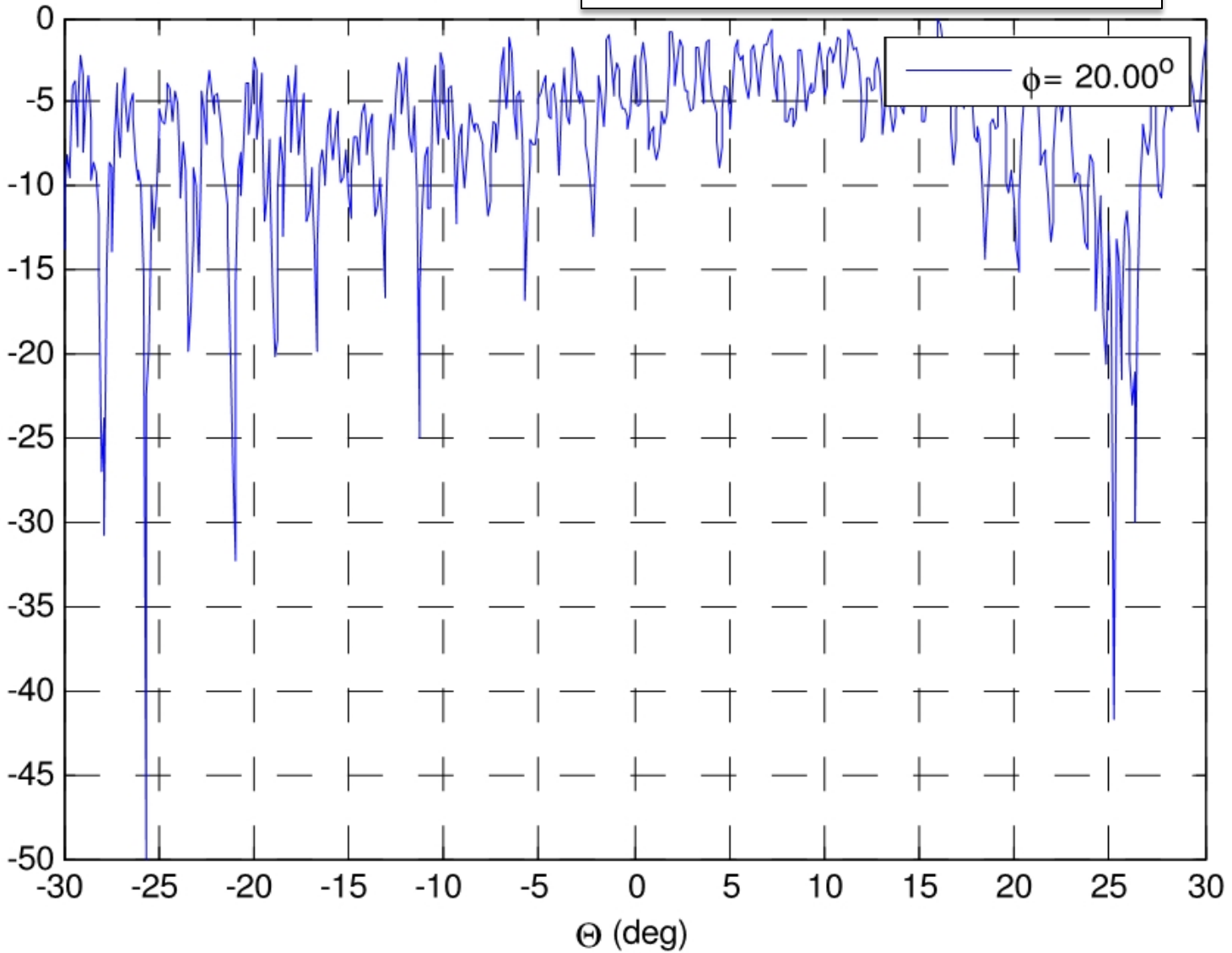


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.4 dBi

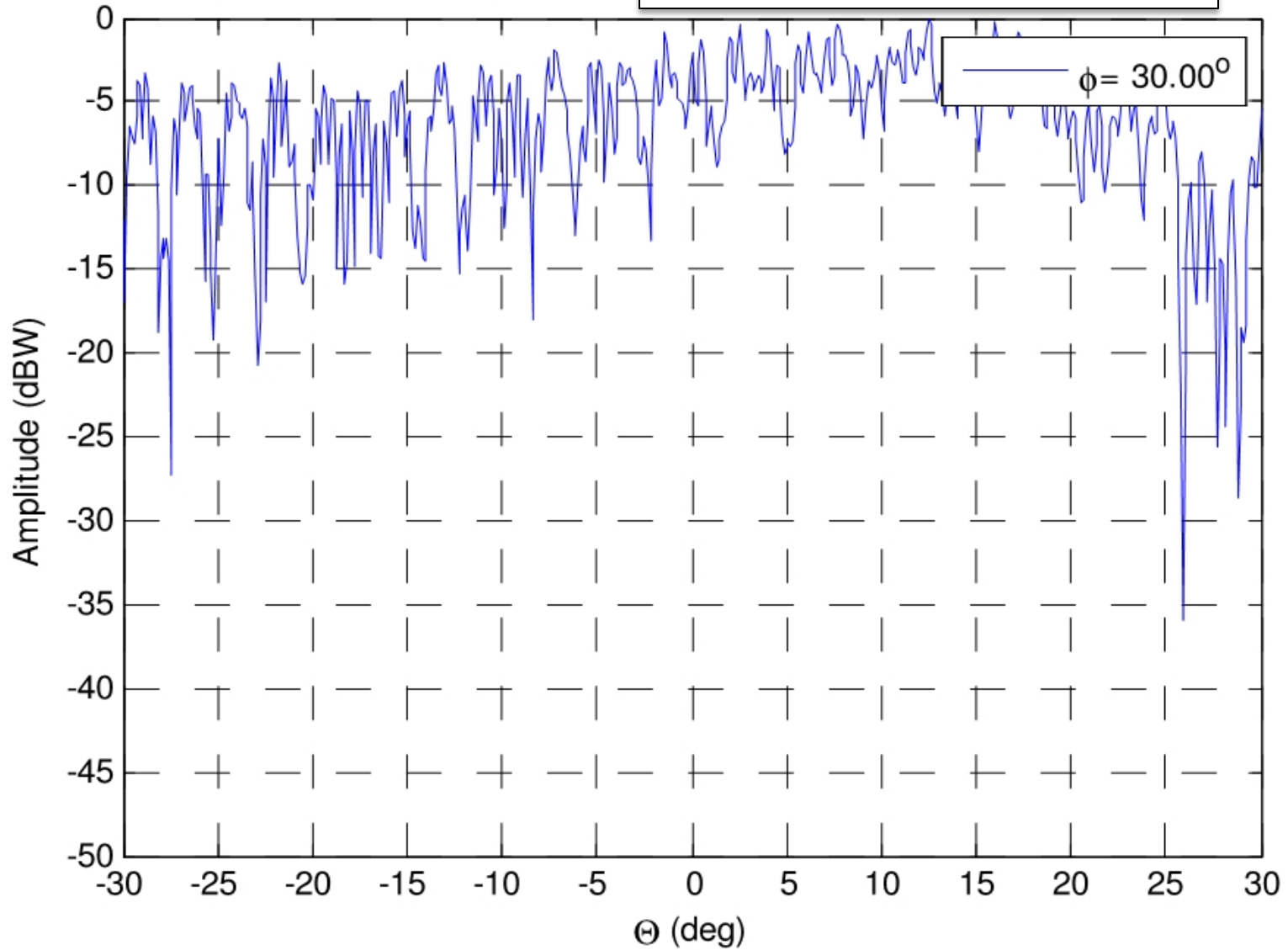
Off-axis Gain Below Peak (dBi)



# Normalized pattern cuts - farfield

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

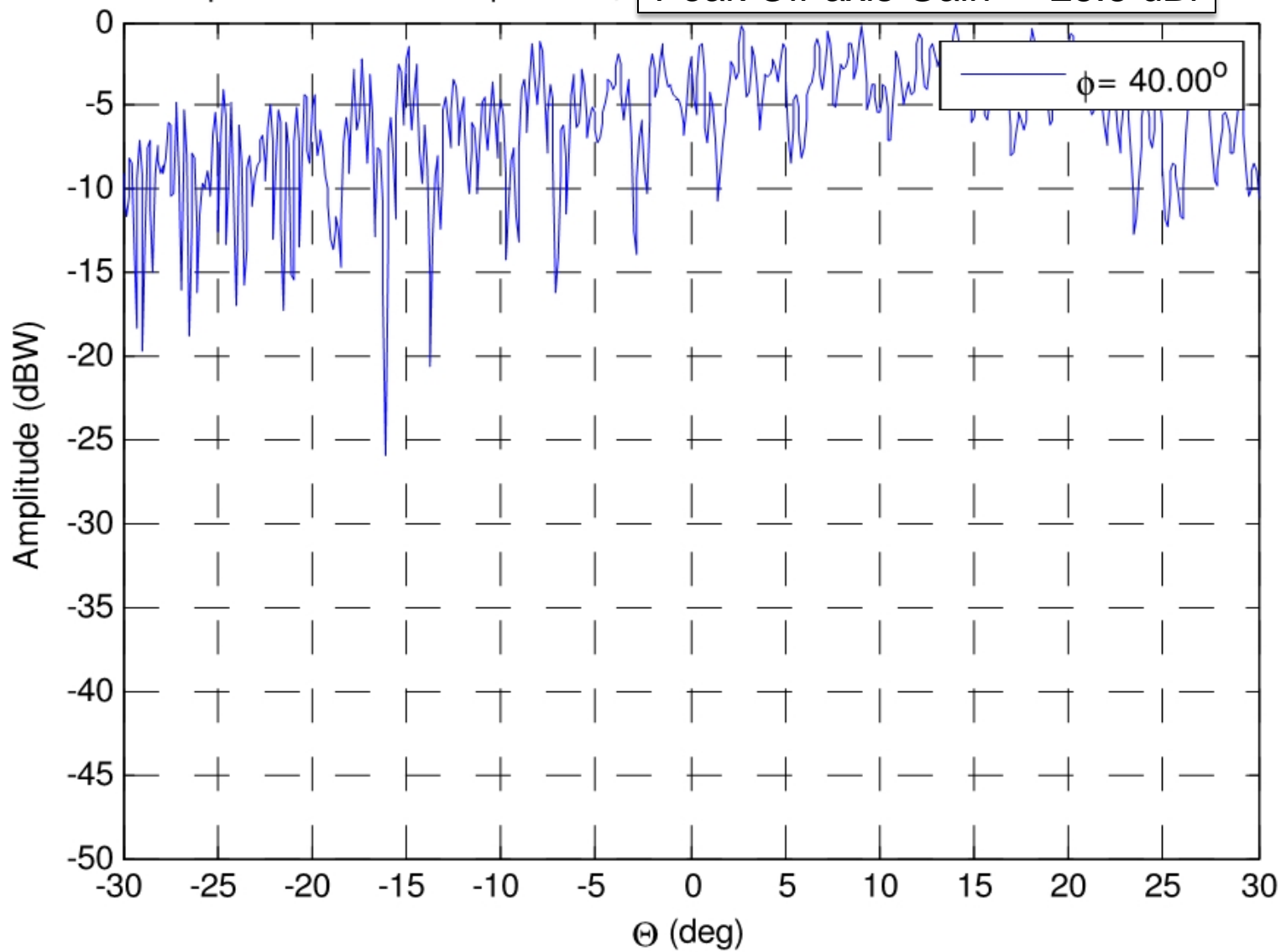
Peak Off-axis Gain = -25.6 dBi



# Normalized pattern cuts - farfield

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

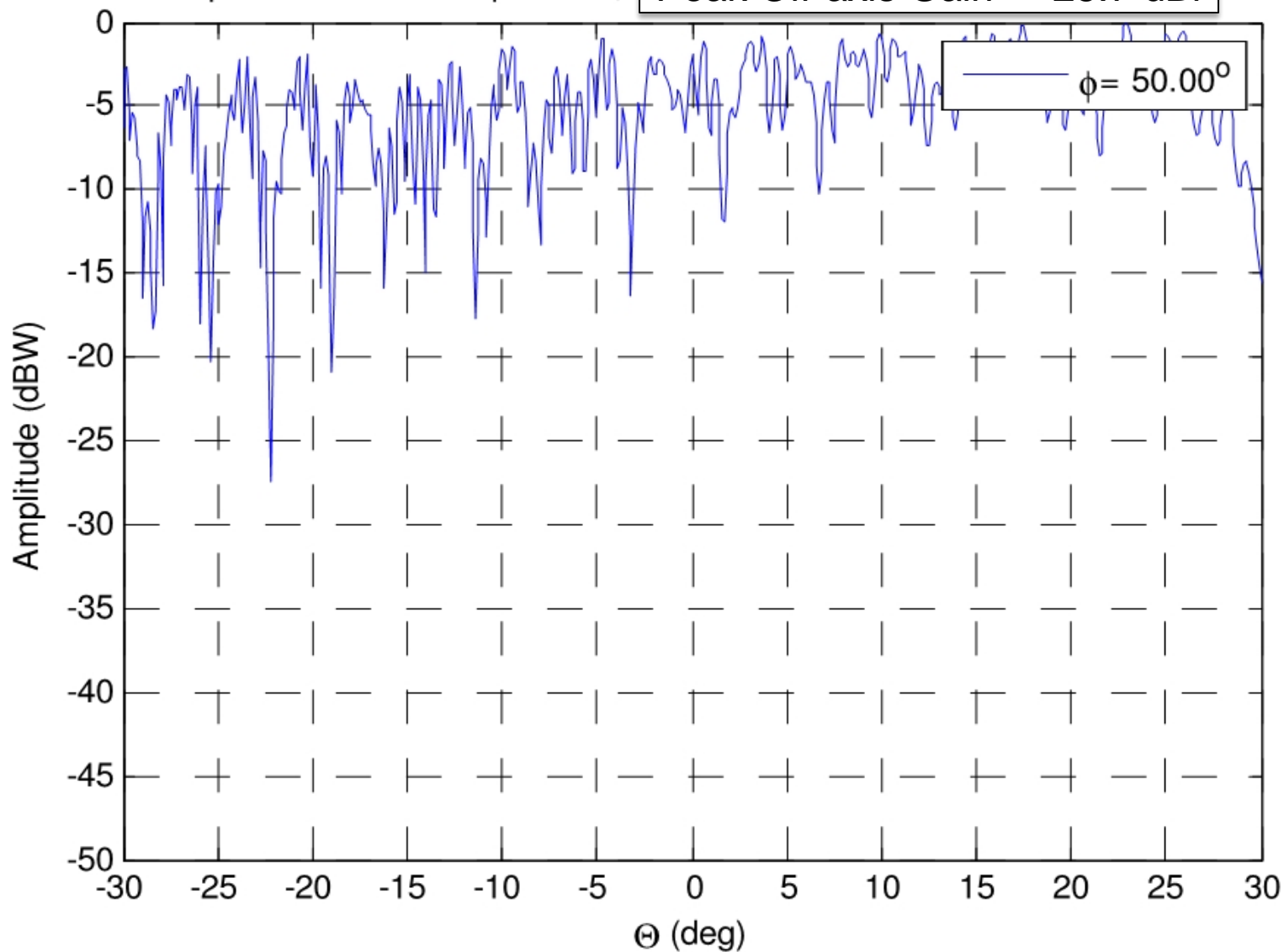
Peak Off-axis Gain = -25.3 dBi



# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.7 dBi

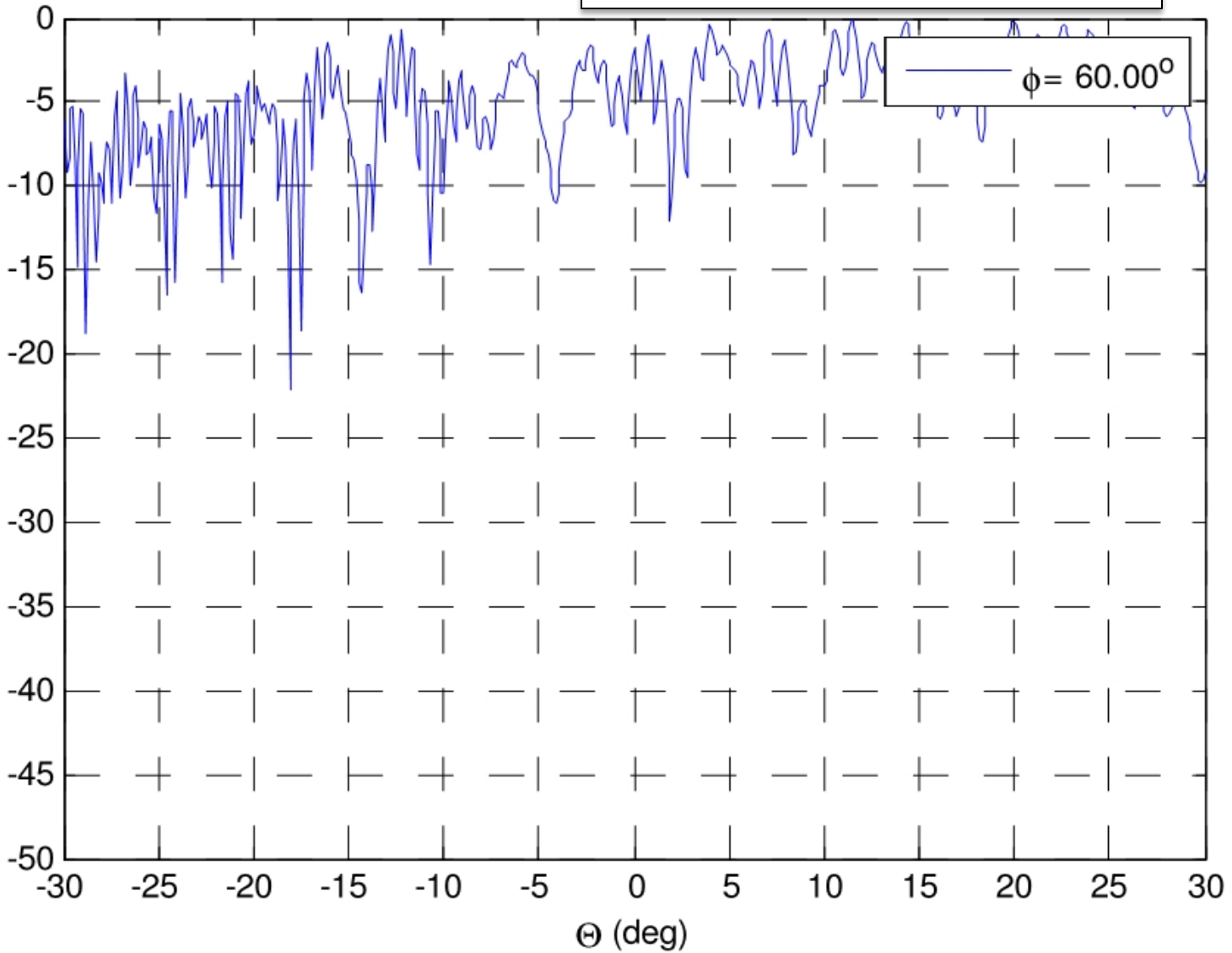


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.9 dBi

Off-axis Gain Below Peak (dBi)



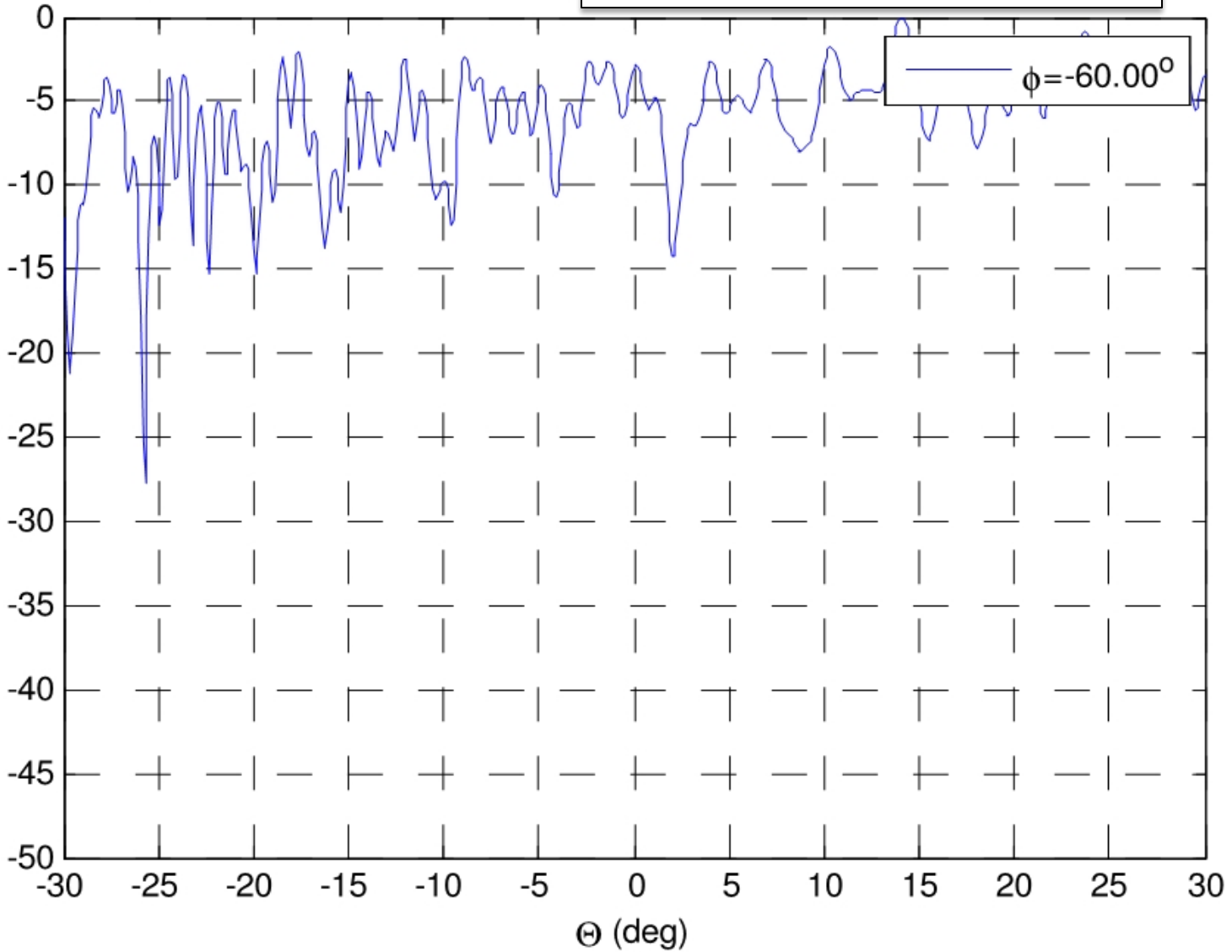
LHCP = 17.305 GHz

# 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)



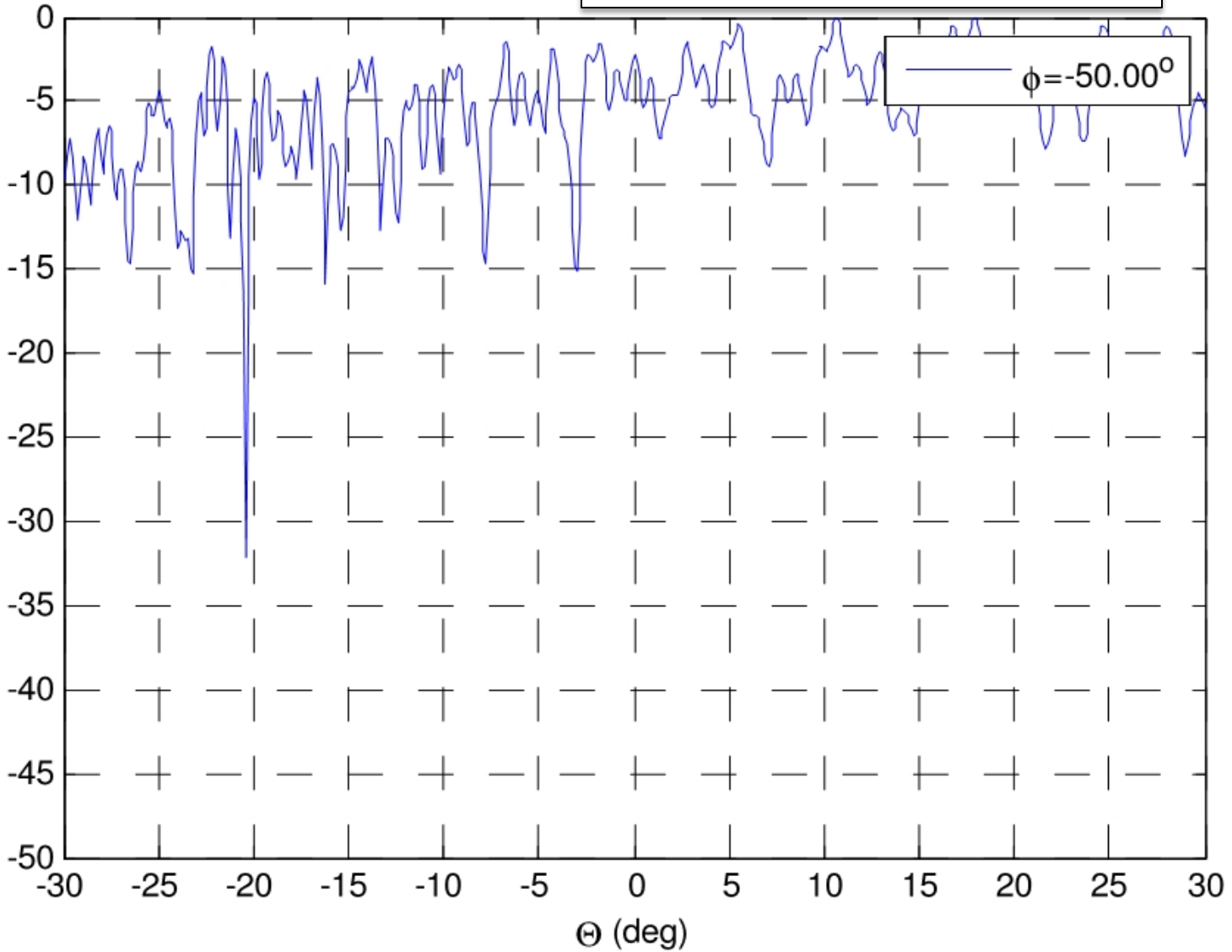


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

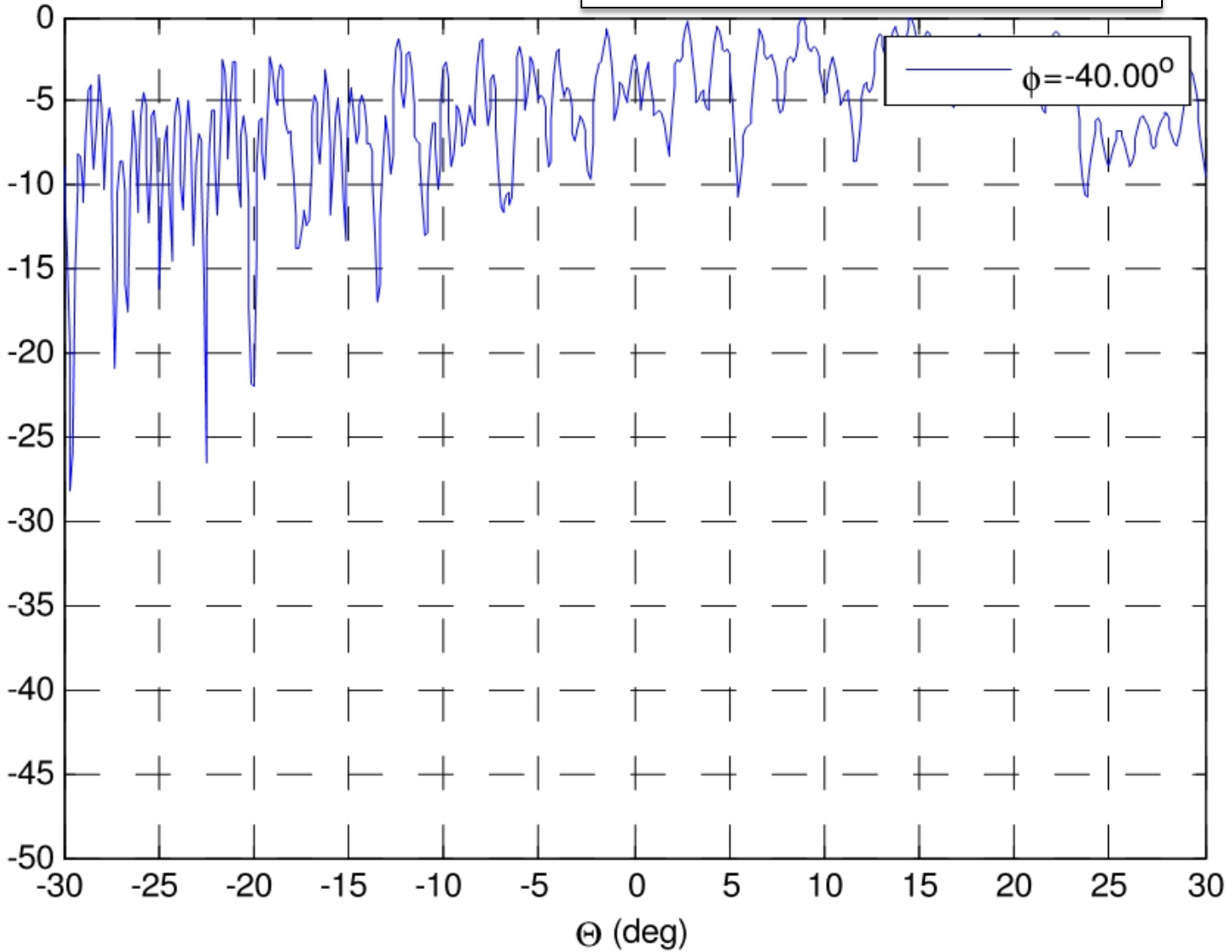


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -26.4 dBi

Off-axis Gain Below Peak (dBi)

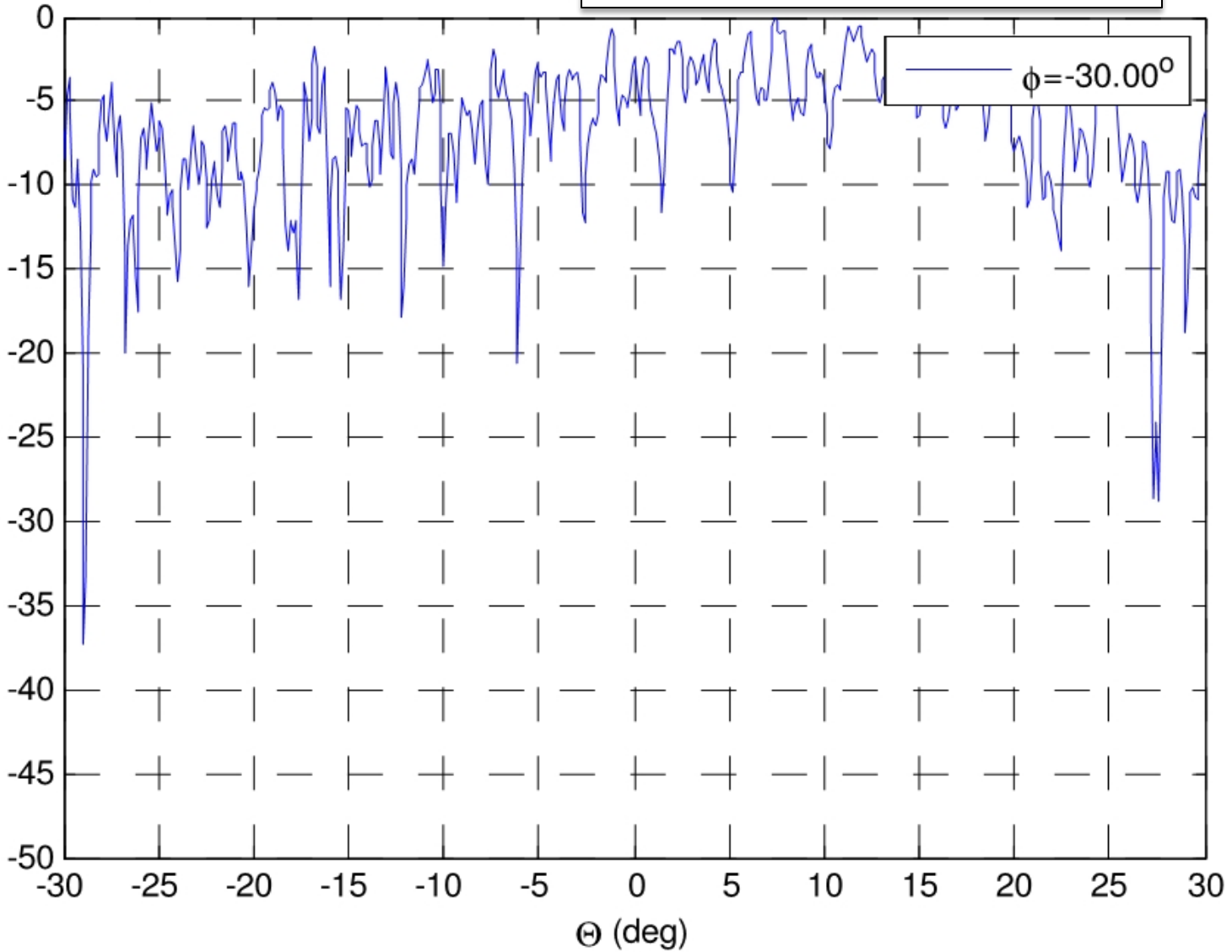


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.6 dBi

Off-axis Gain Below Peak (dBi)

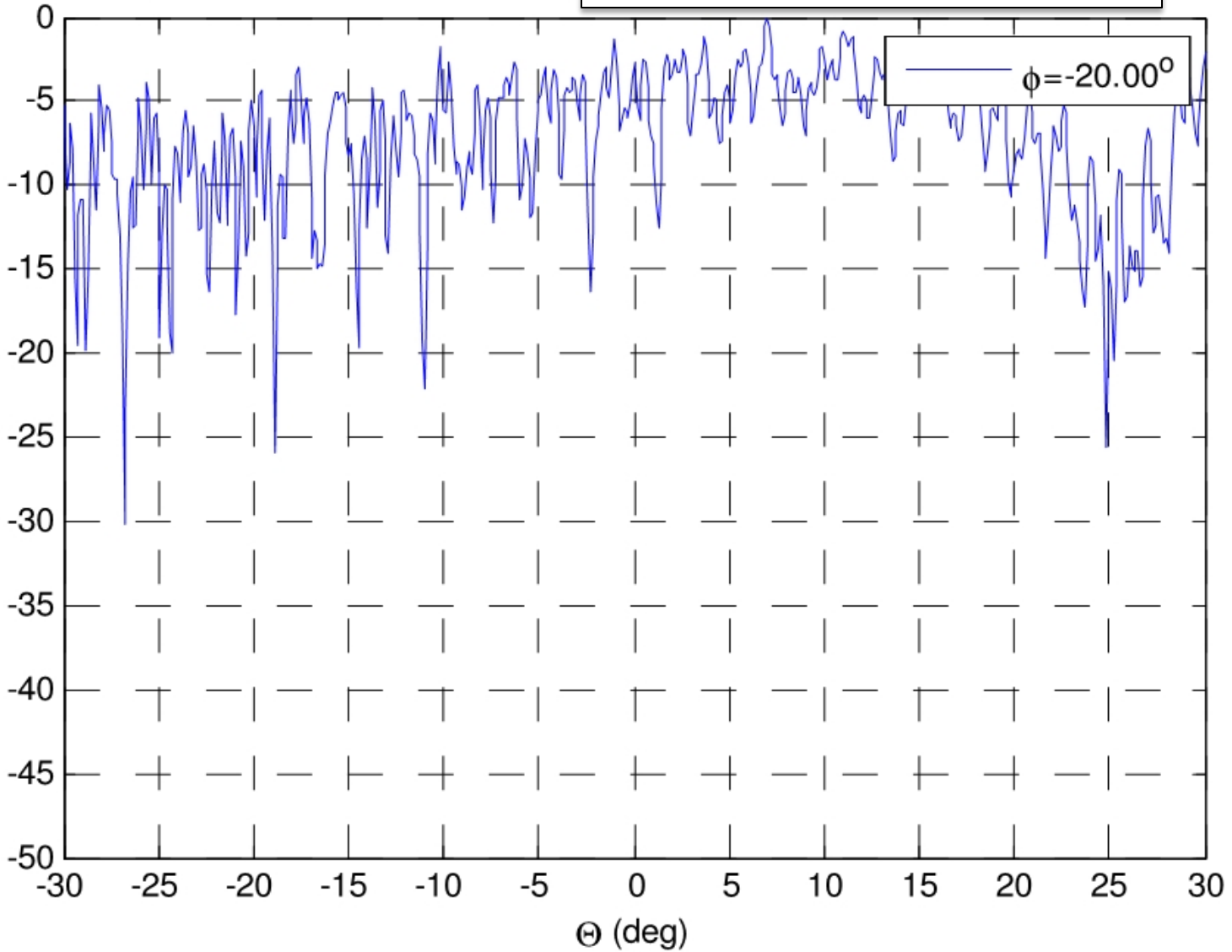


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

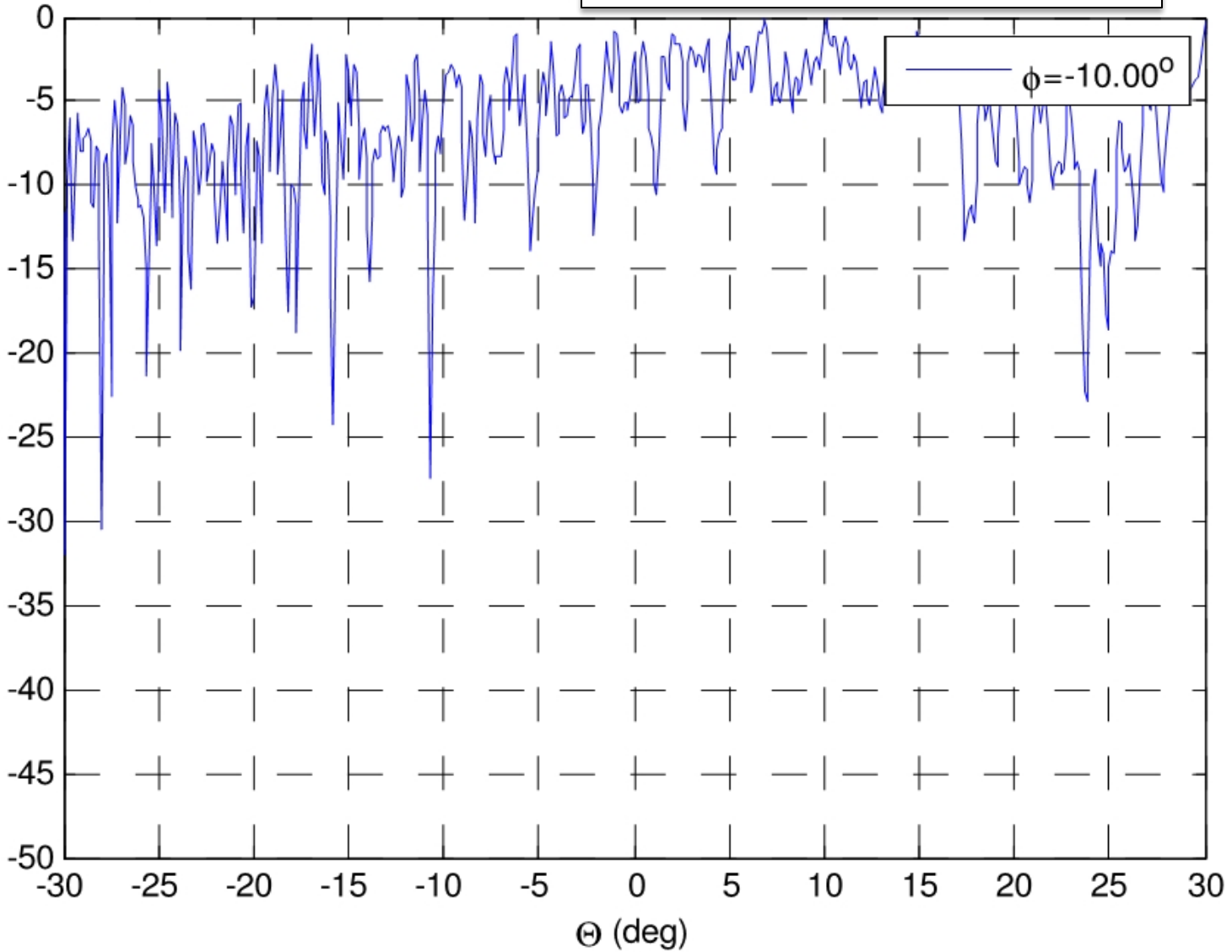


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.8 dBi

Off-axis Gain Below Peak (dBi)

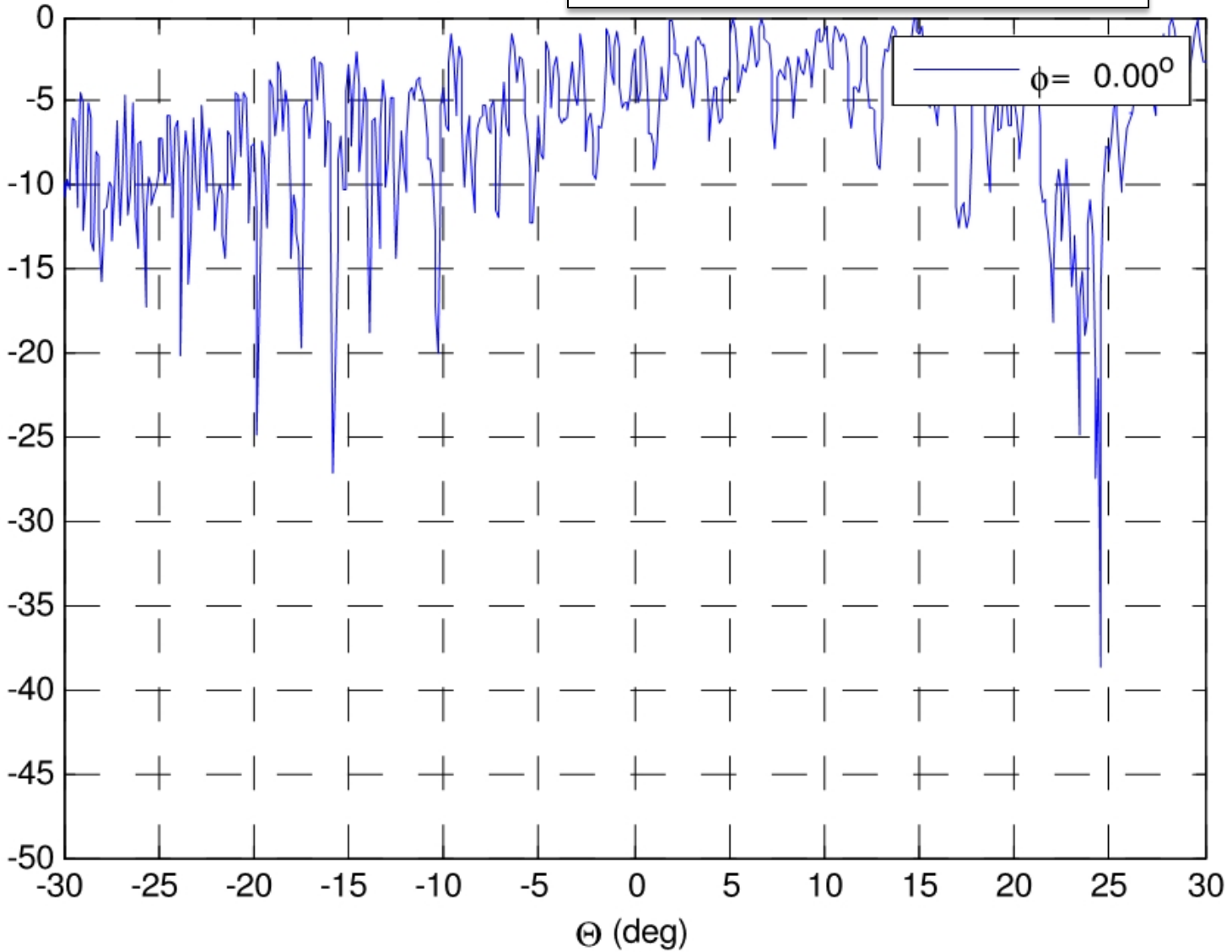


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

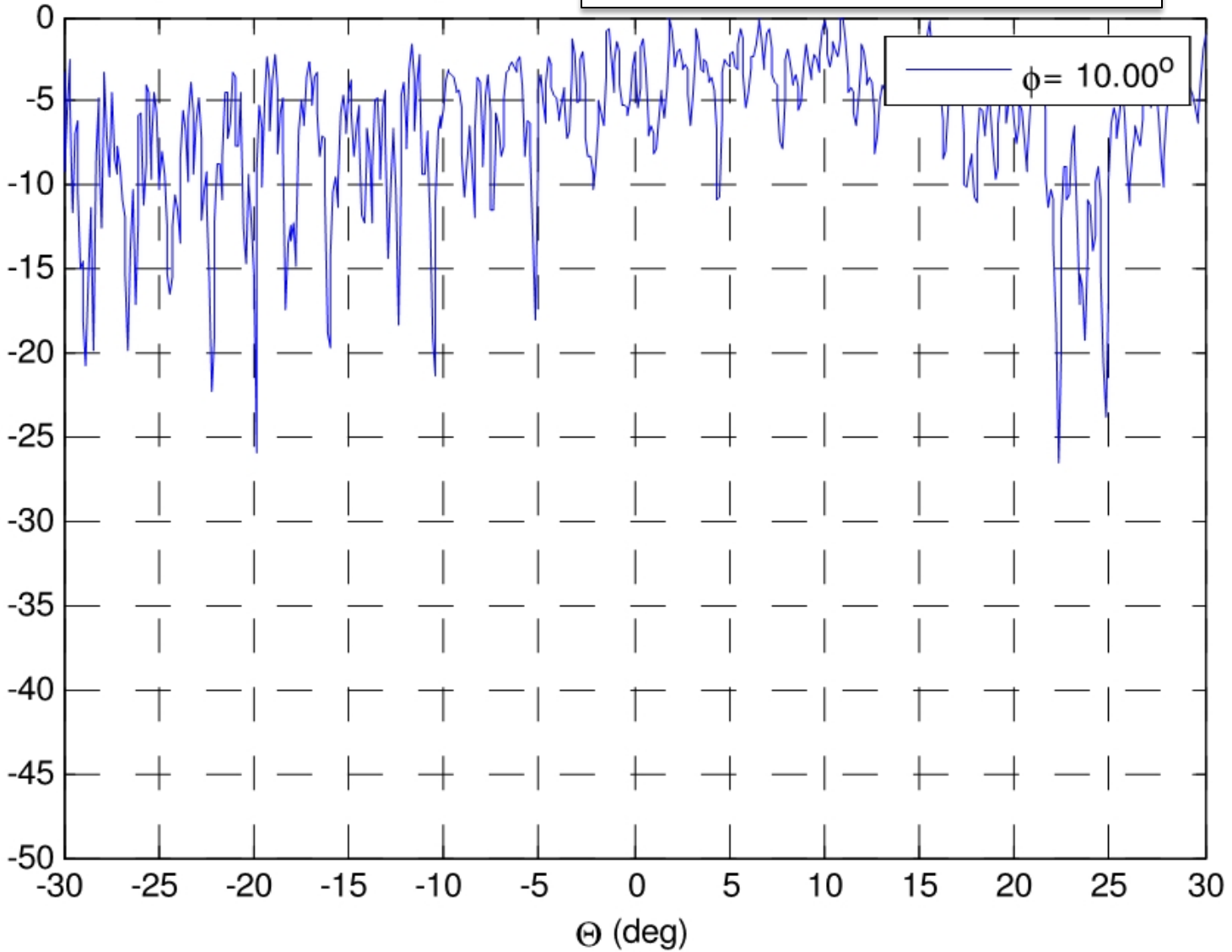


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.9 dBi

Off-axis Gain Below Peak (dBi)

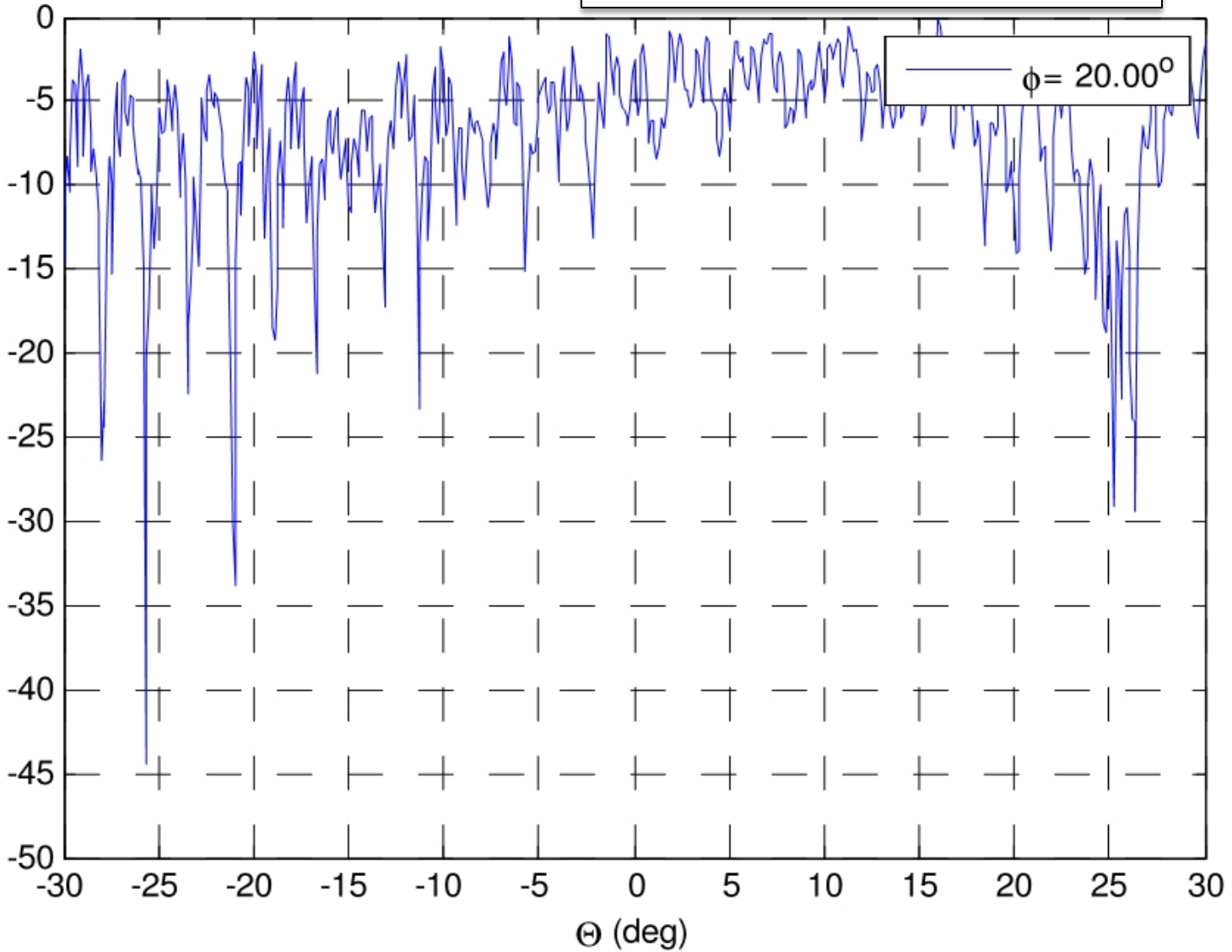


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)



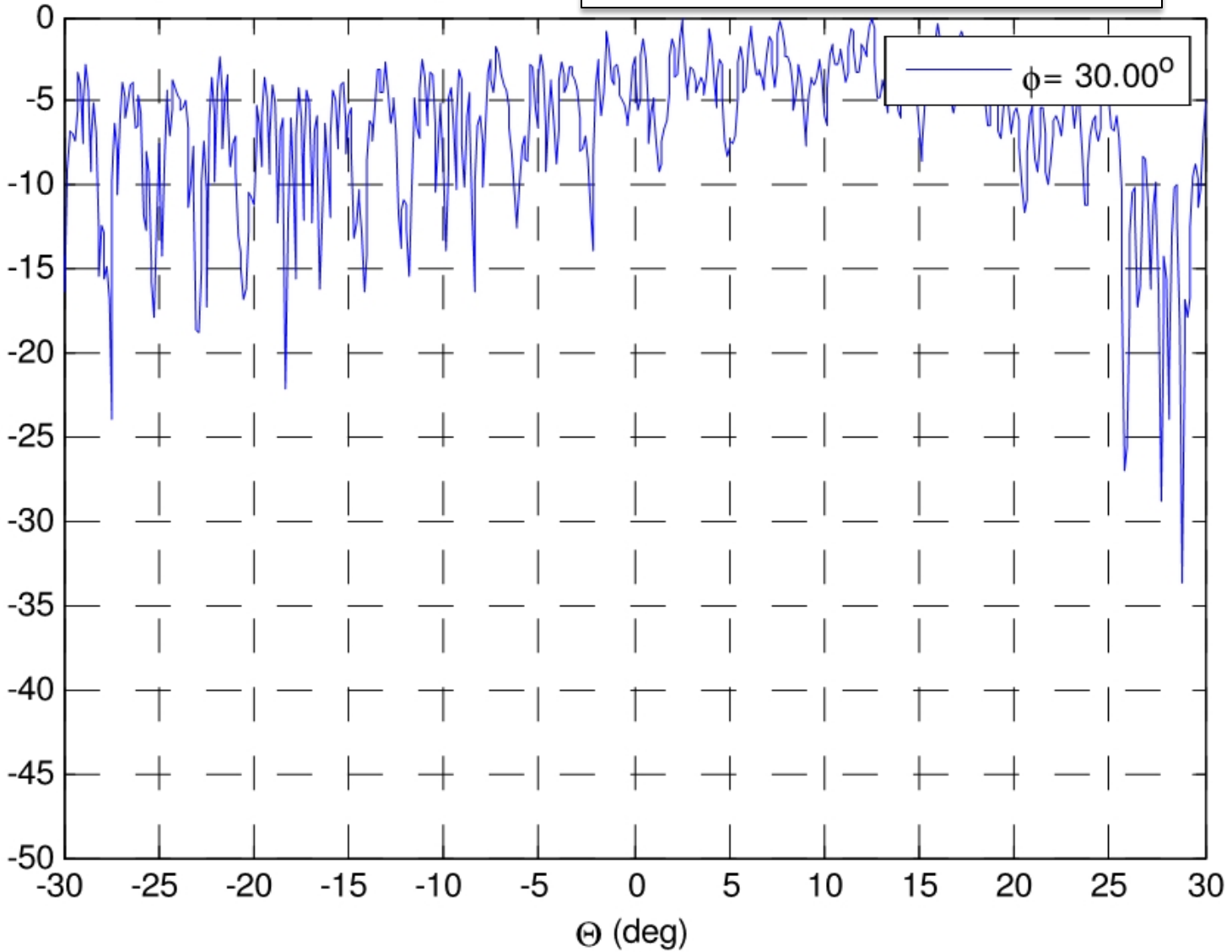


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.6 dBi

Off-axis Gain Below Peak (dBi)

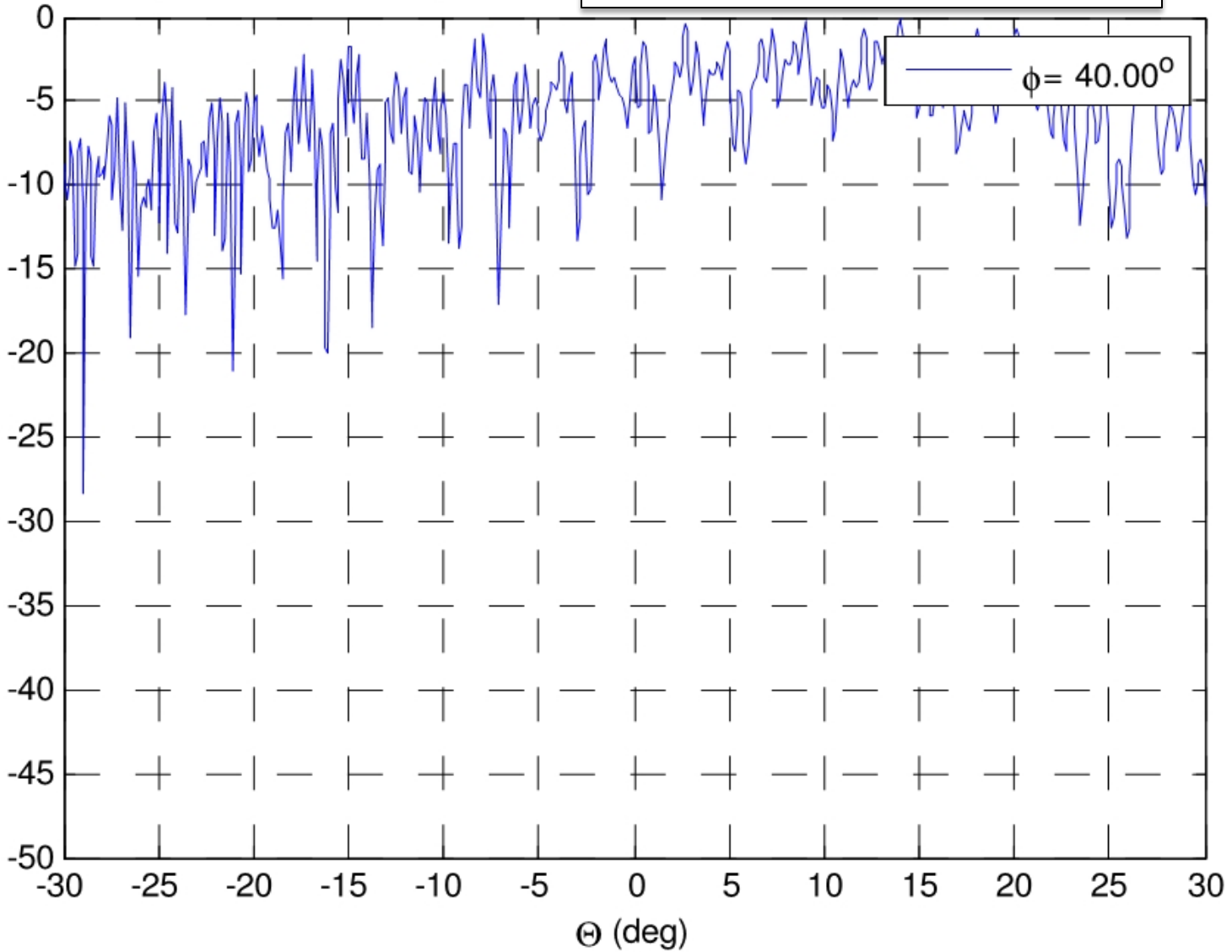


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.5 dBi

Off-axis Gain Below Peak (dBi)

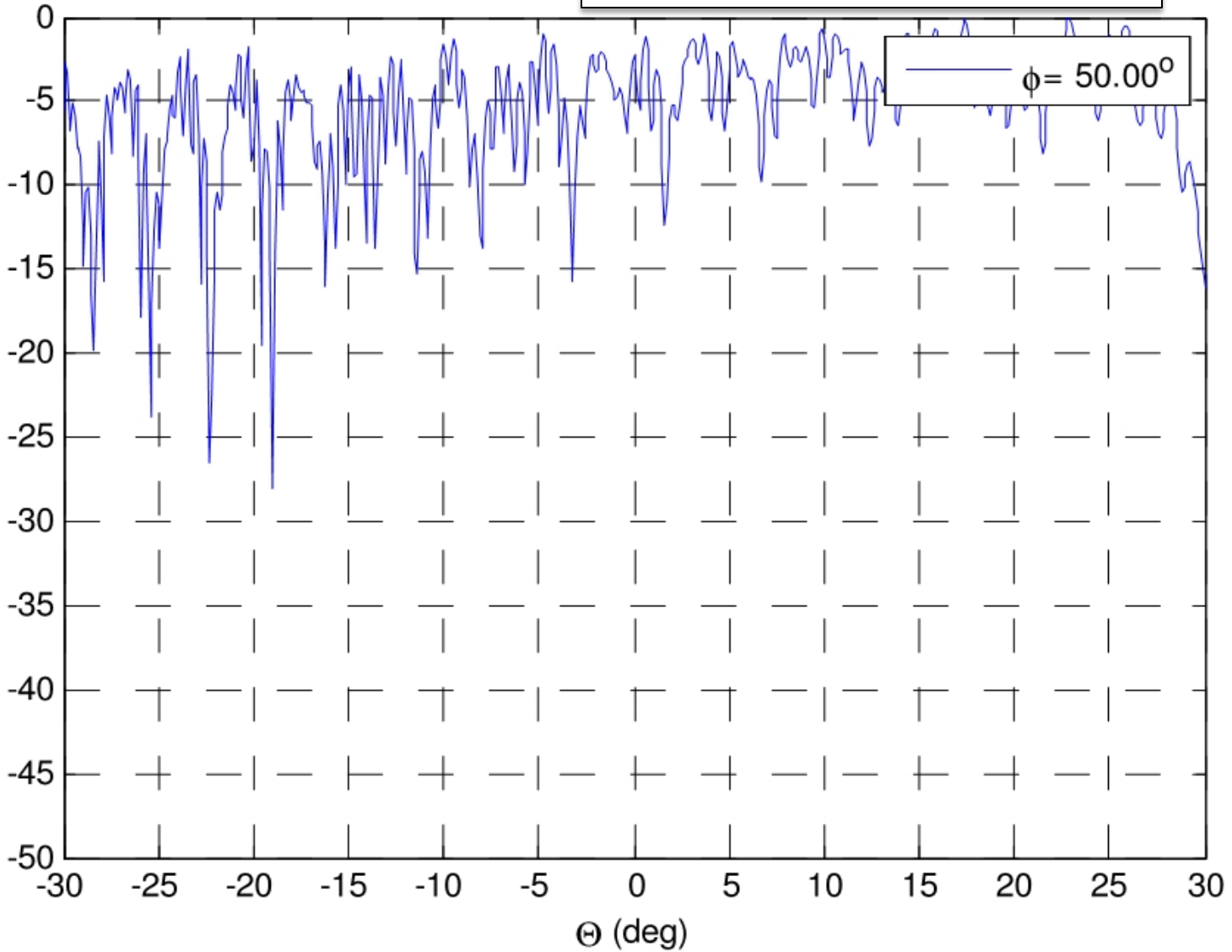


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

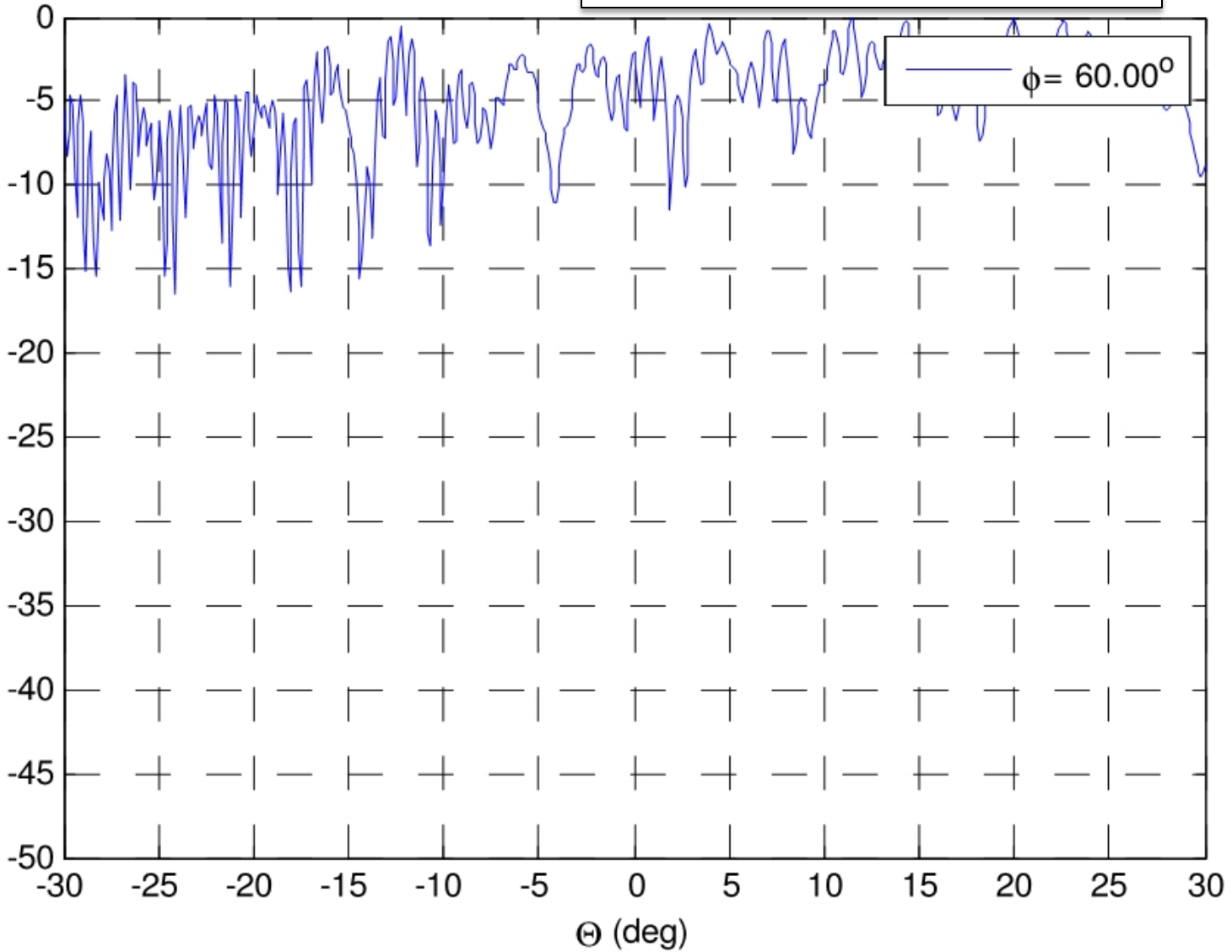


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.9 dBi

Off-axis Gain Below Peak (dBi)



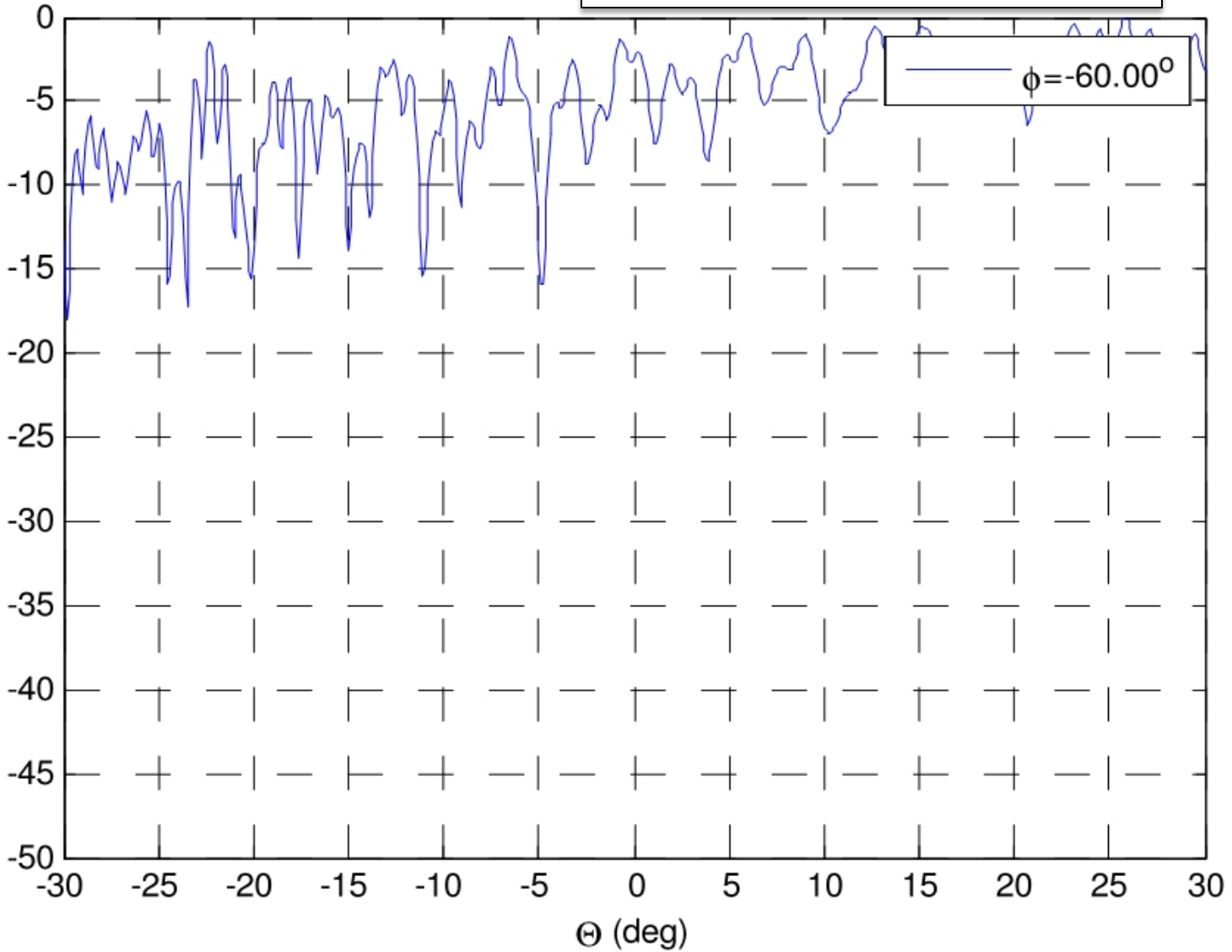
**RHCP = 17.5 GHz**

# 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)

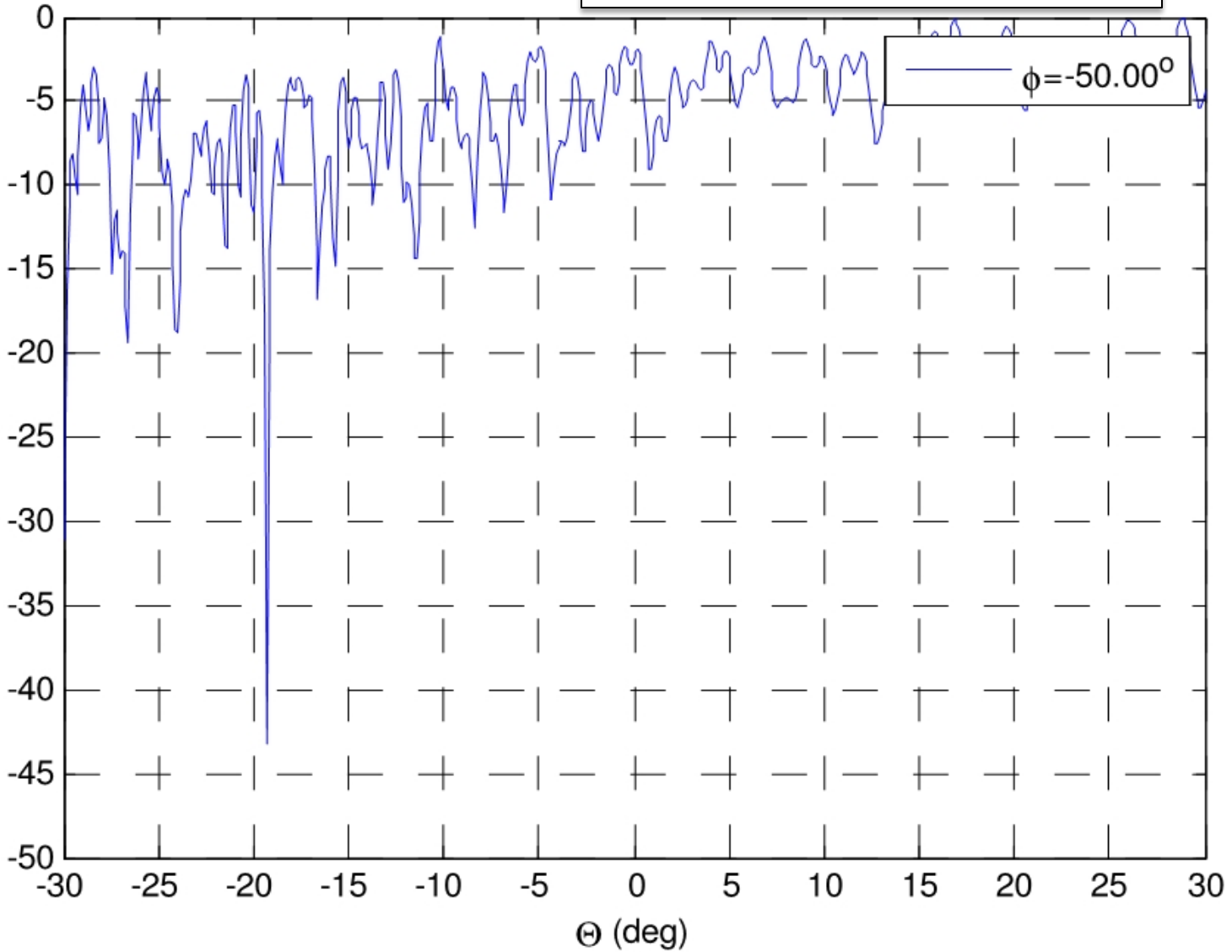


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.6 dBi

Off-axis Gain Below Peak (dBi)

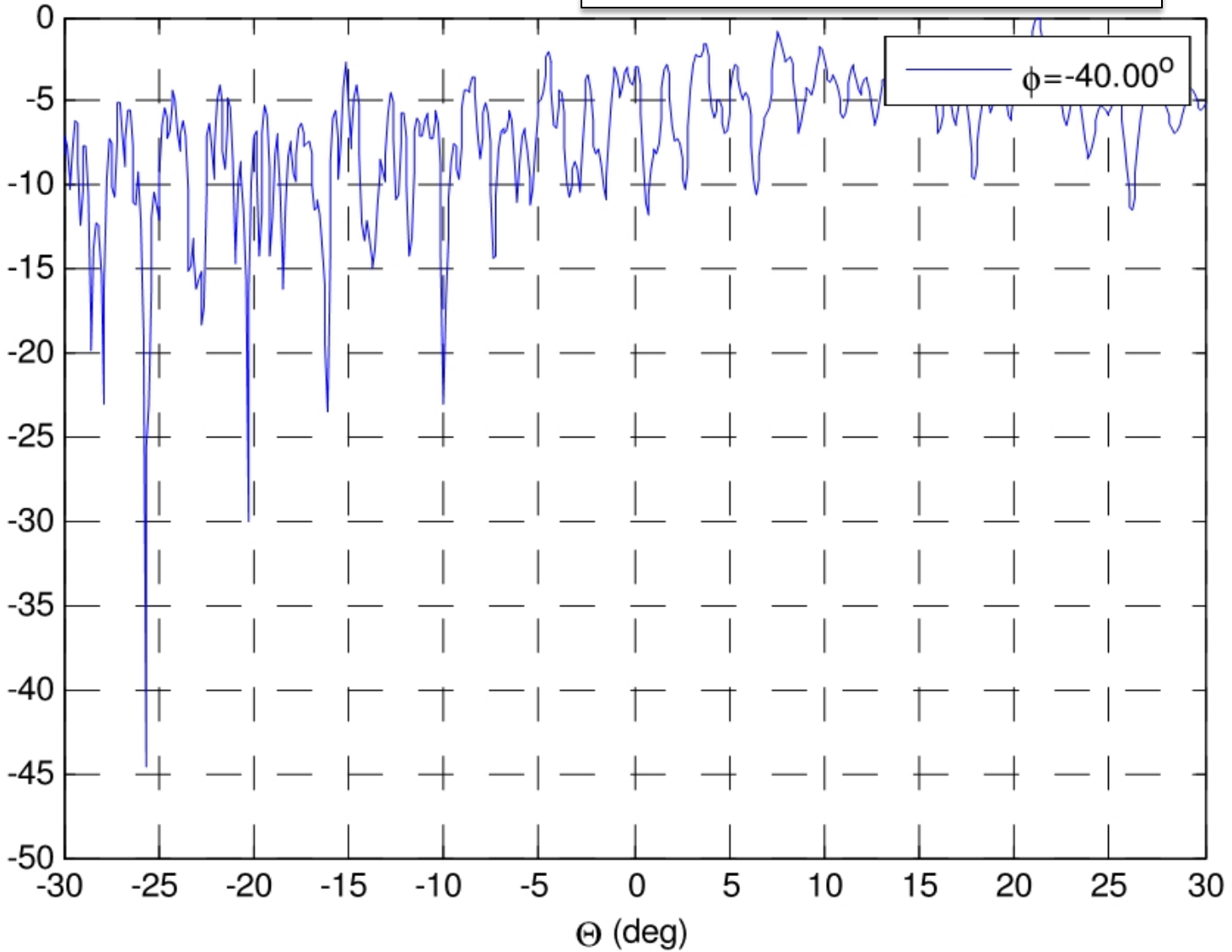


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.5 dBi

Off-axis Gain Below Peak (dBi)



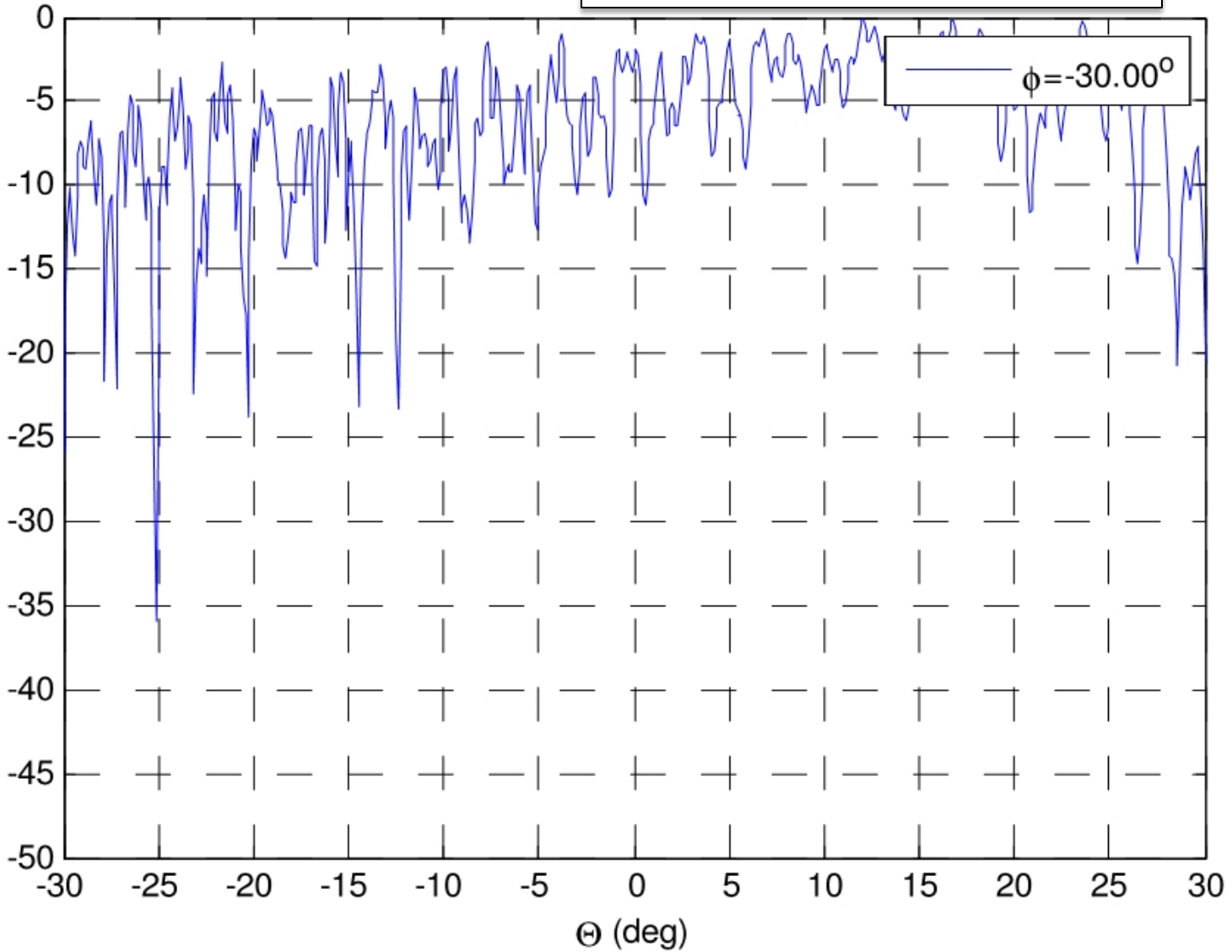


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.5 dBi

Off-axis Gain Below Peak (dBi)

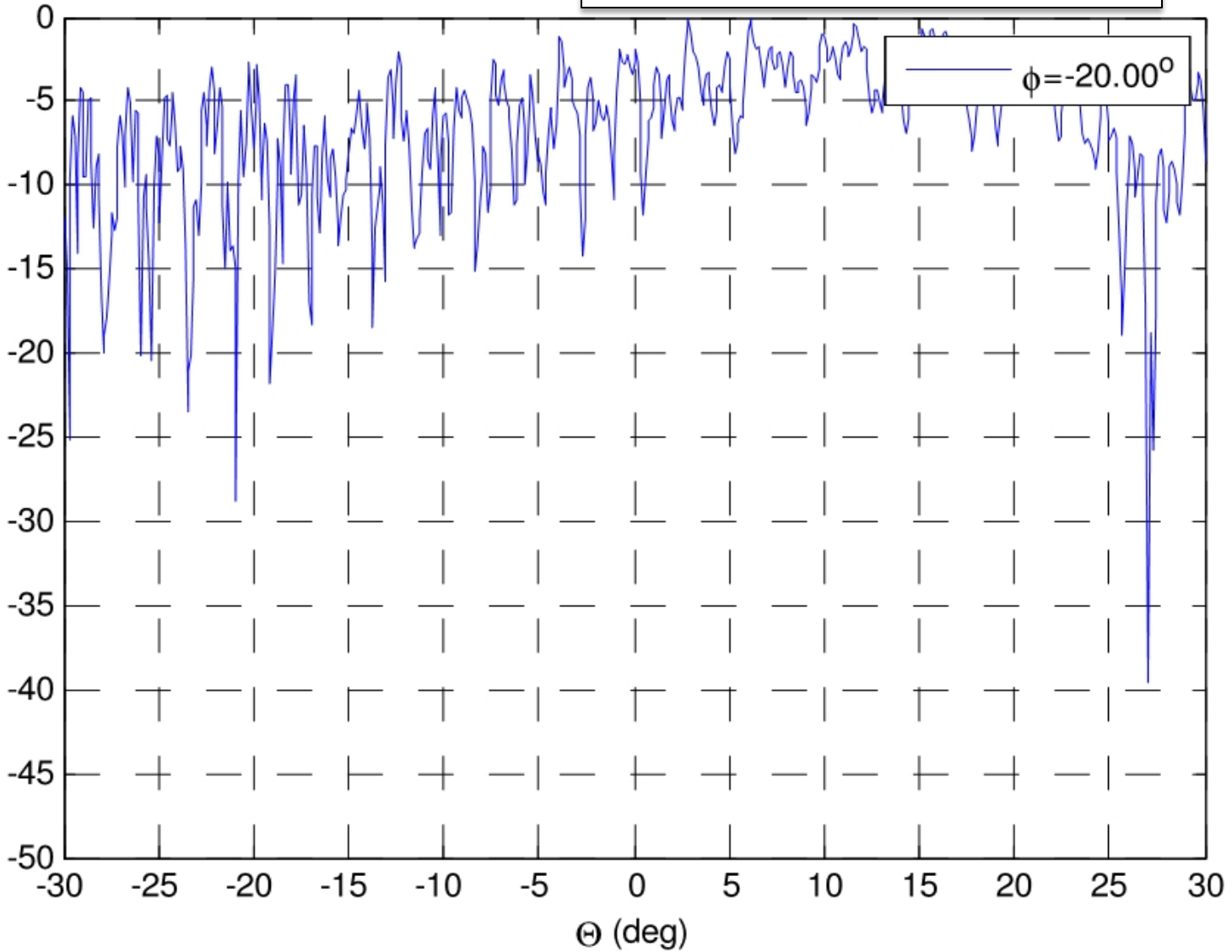


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

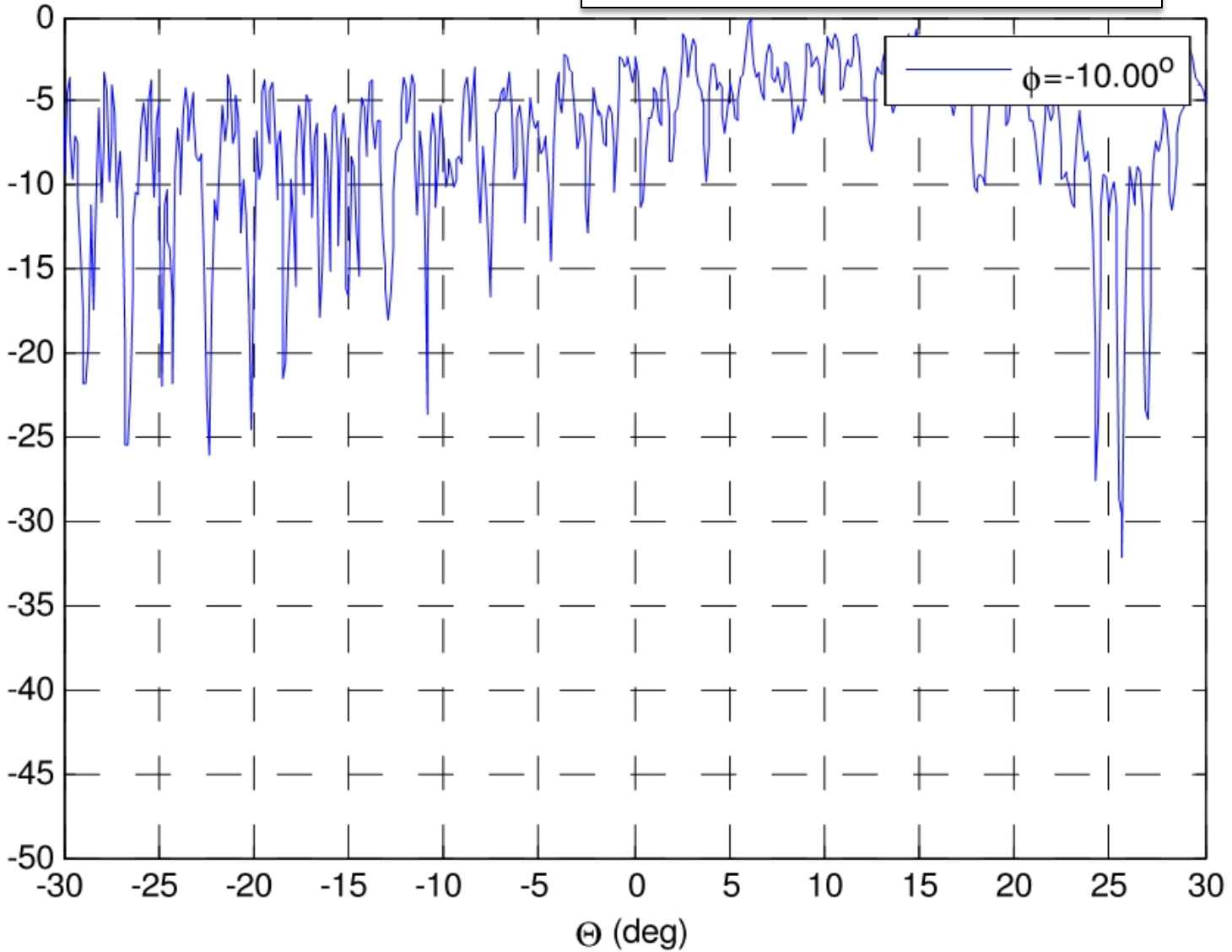


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.1 dBi

Off-axis Gain Below Peak (dBi)

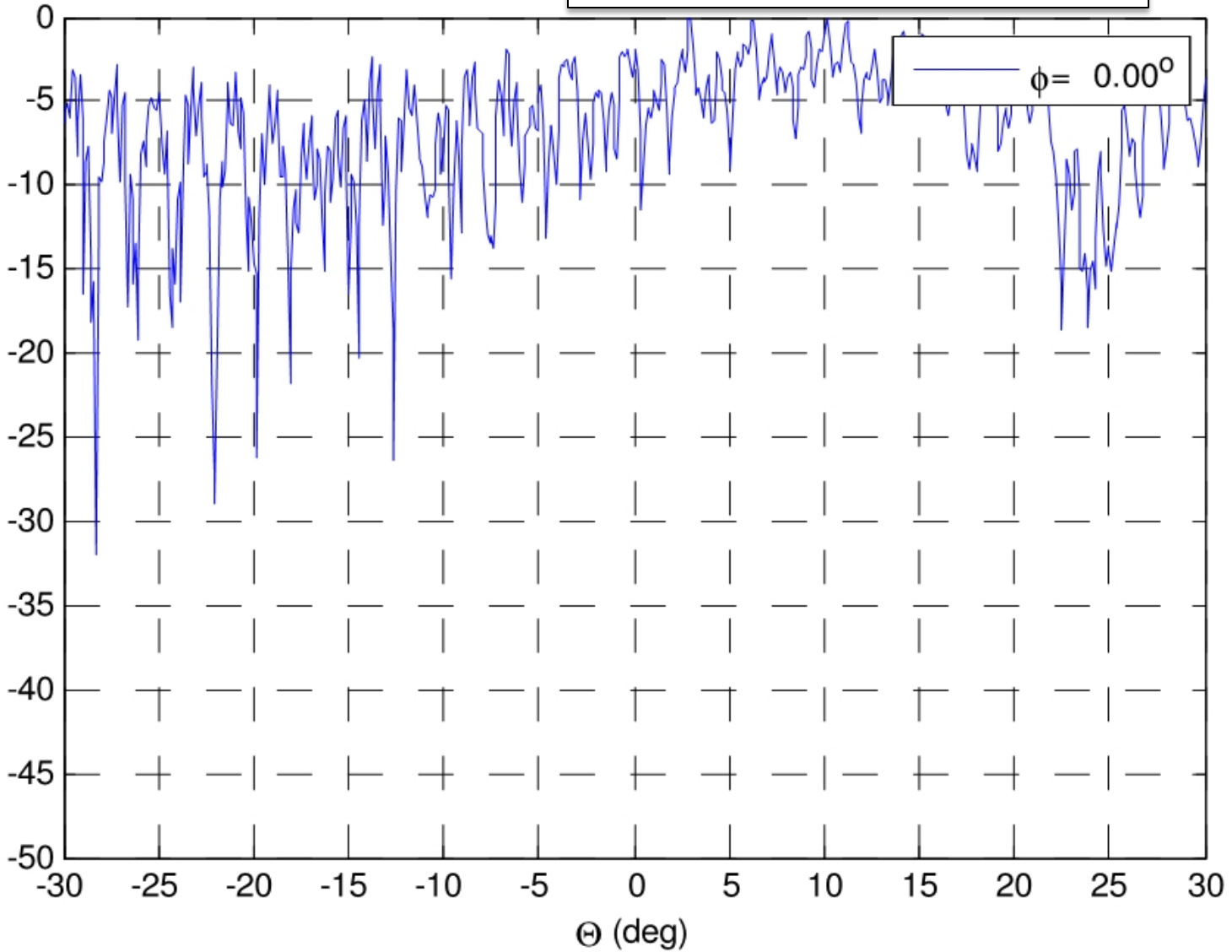


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.7 dBi

Off-axis Gain Below Peak (dBi)

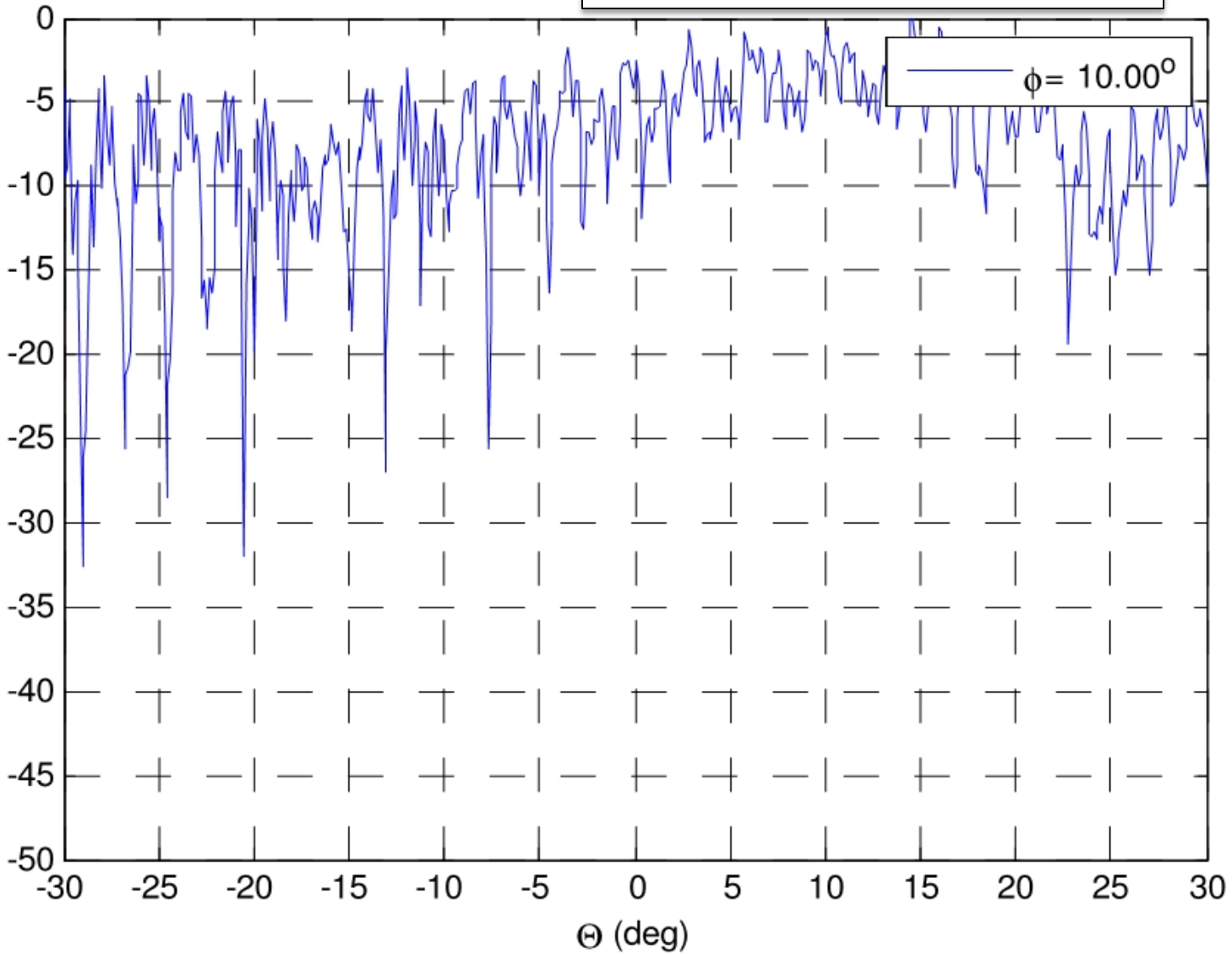


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.8 dBi

Off-axis Gain Below Peak (dBi)

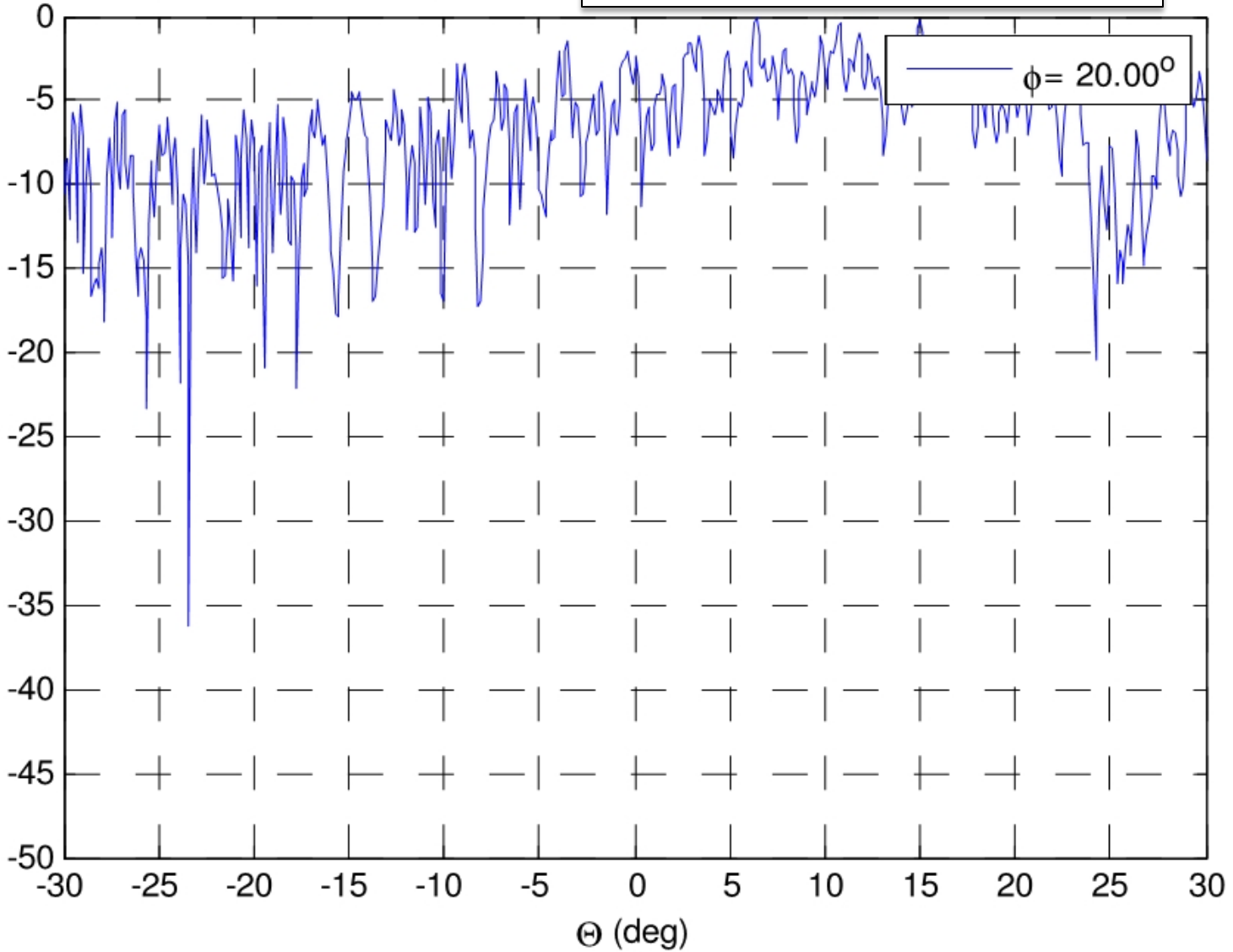


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.1 dBi

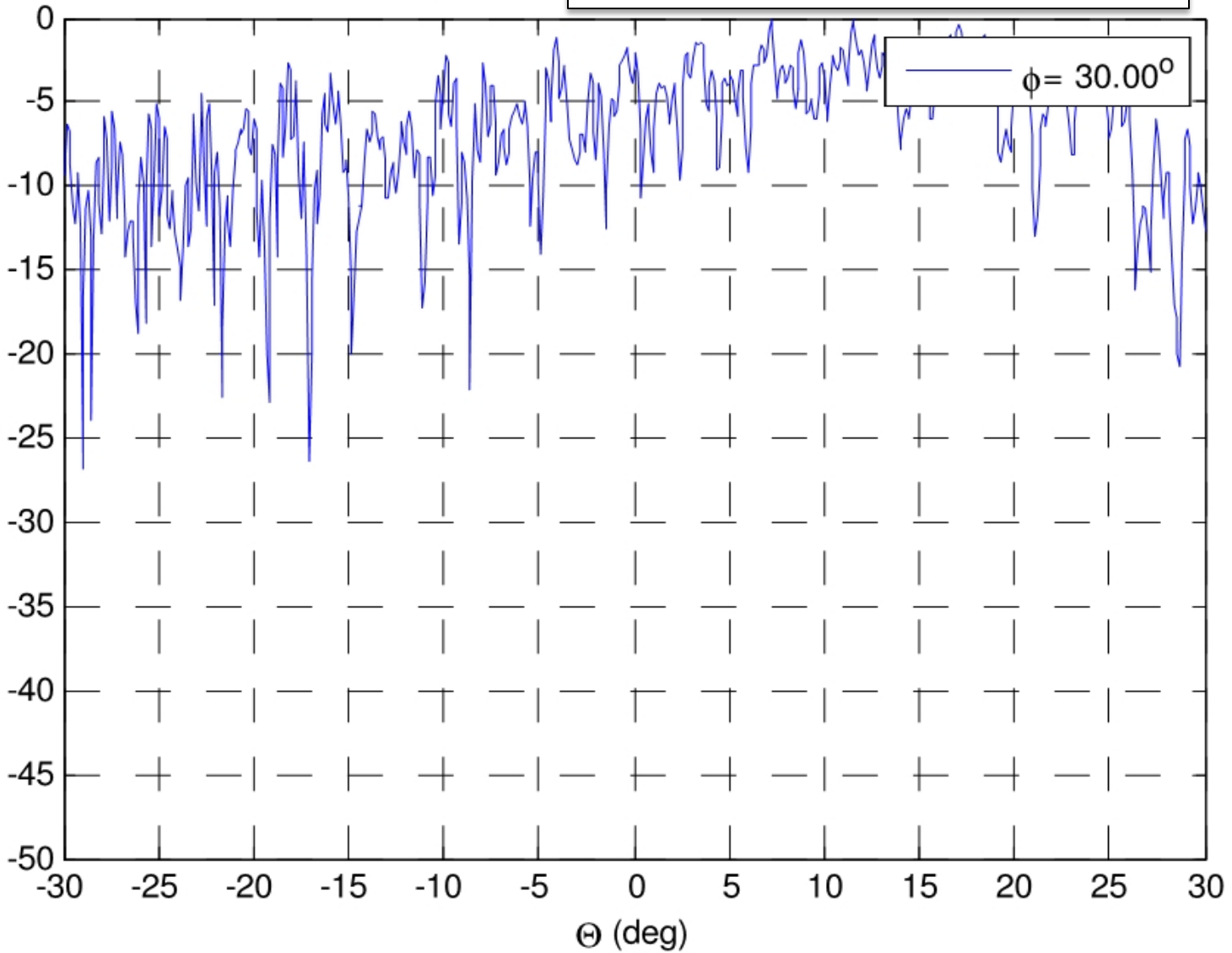
Off-axis Gain Below Peak (dBi)



# 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)

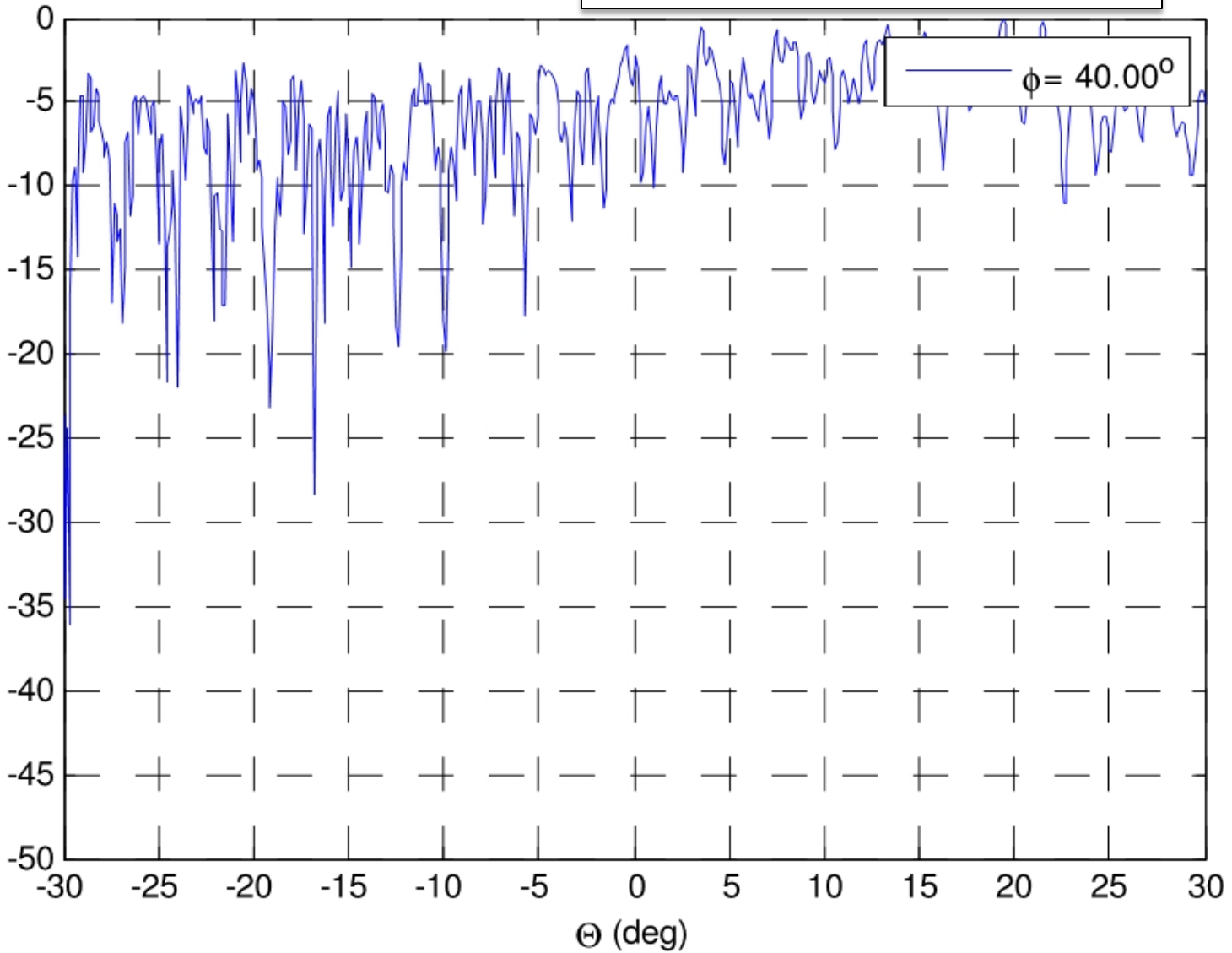


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)



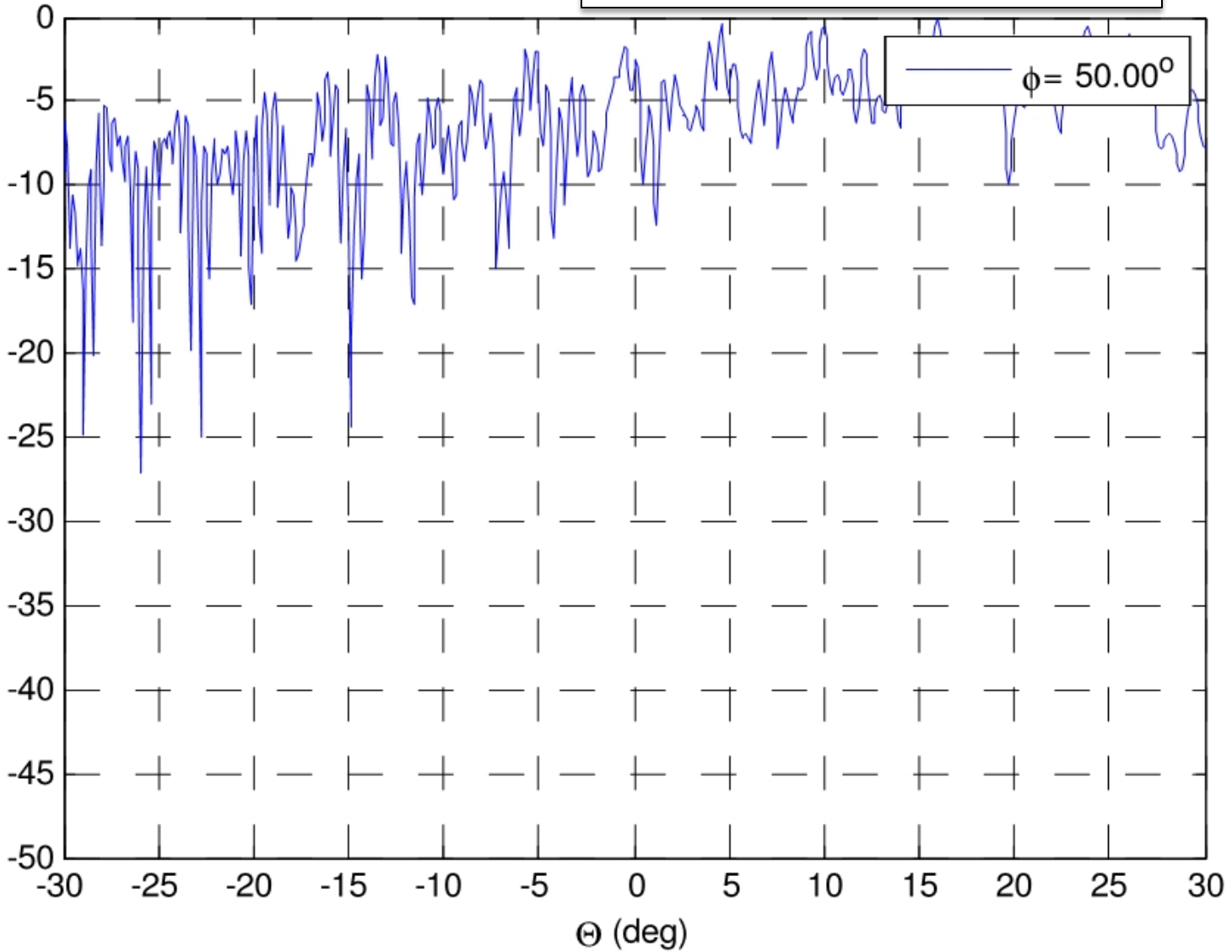


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.5 dBi

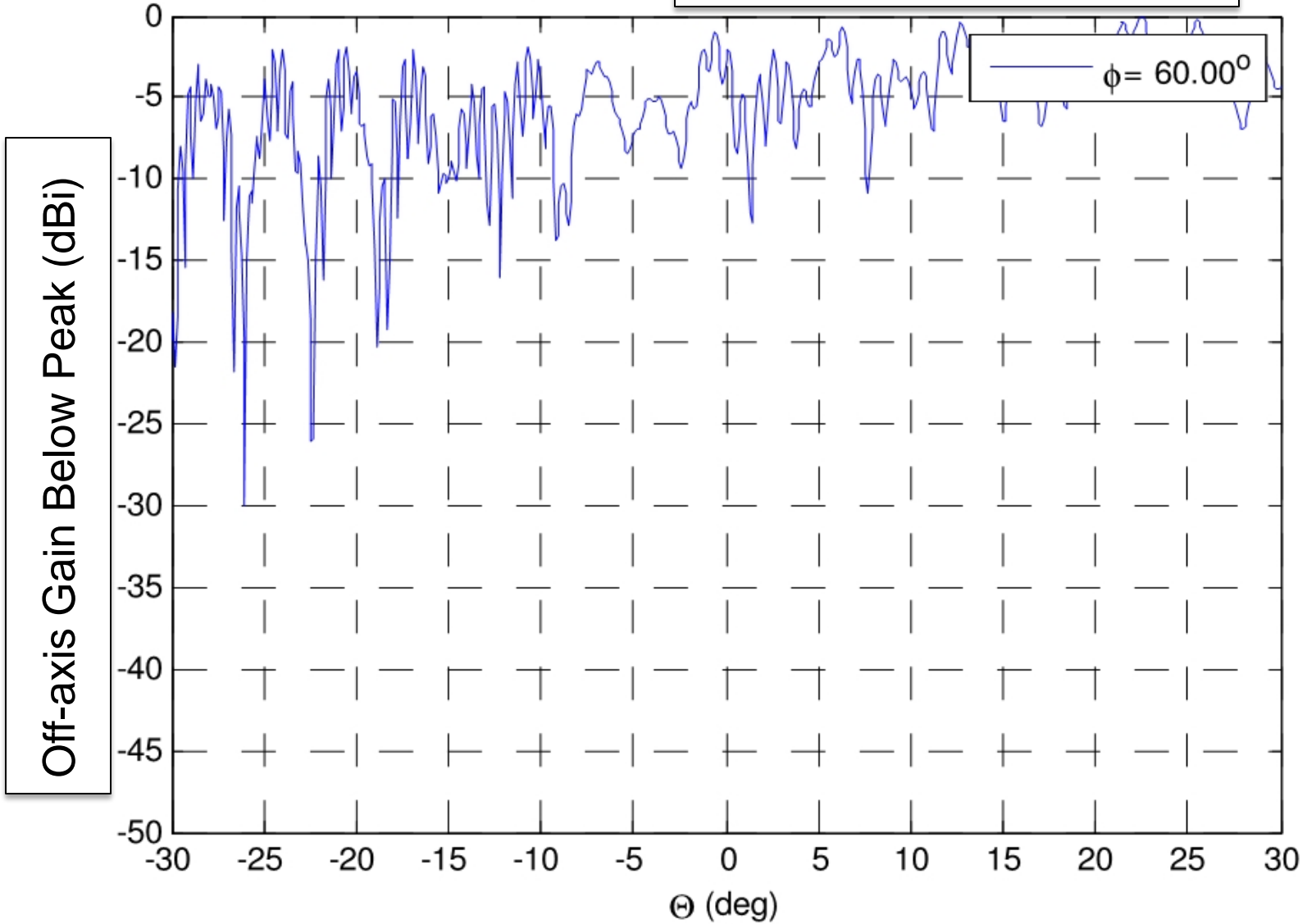
Off-axis Gain Below Peak (dBi)



# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.3 dBi



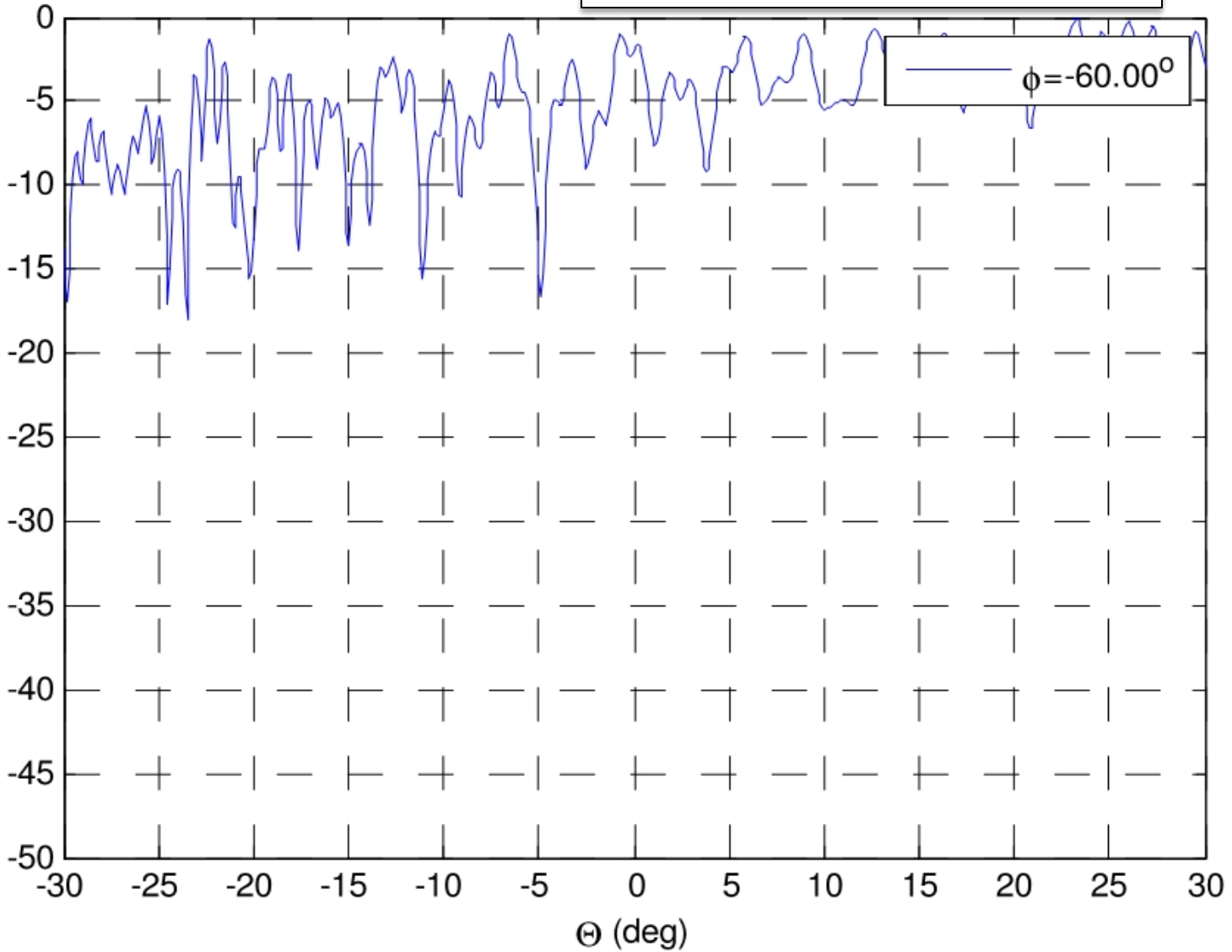
**LHCP = 17.5 GHz**

# 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)

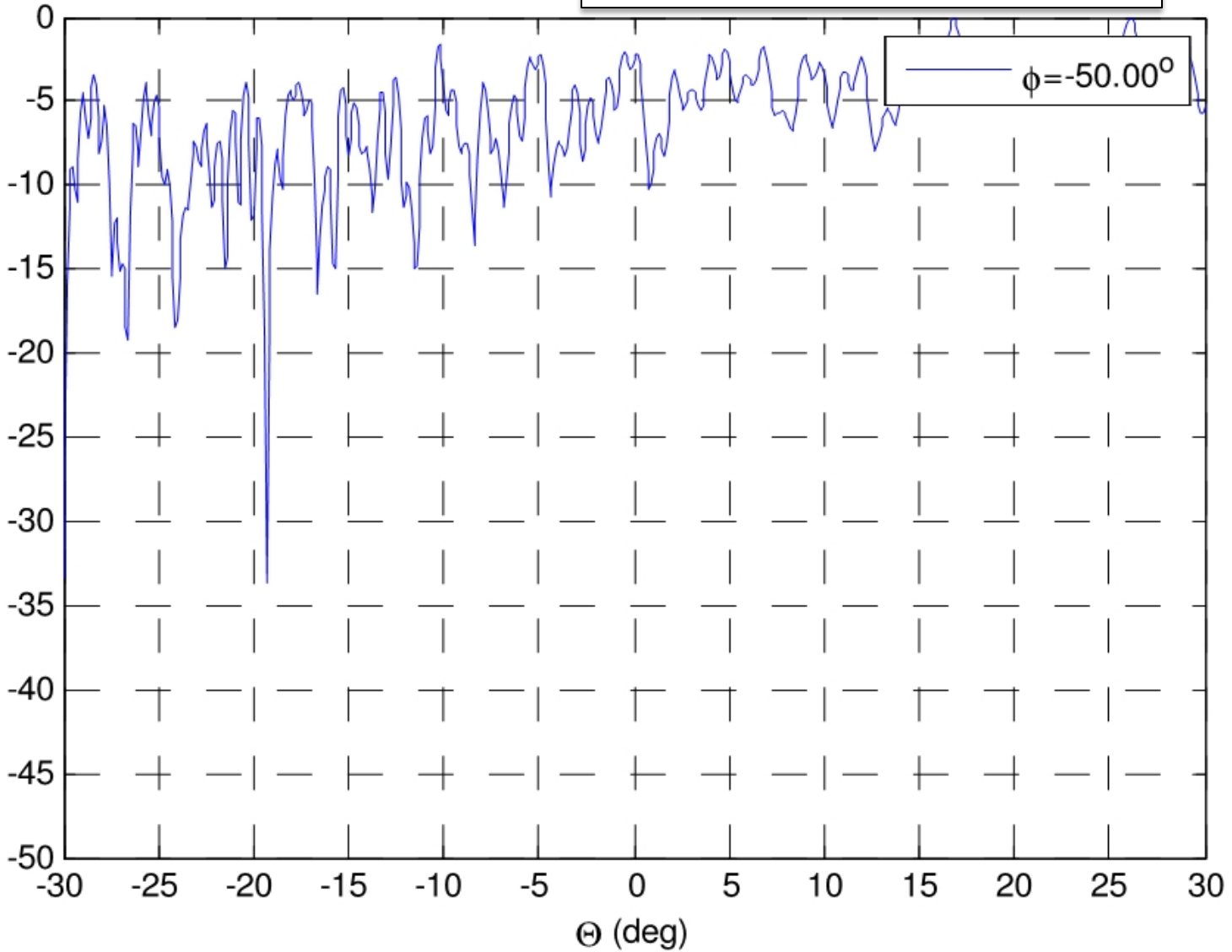


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.1 dBi

Off-axis Gain Below Peak (dBi)

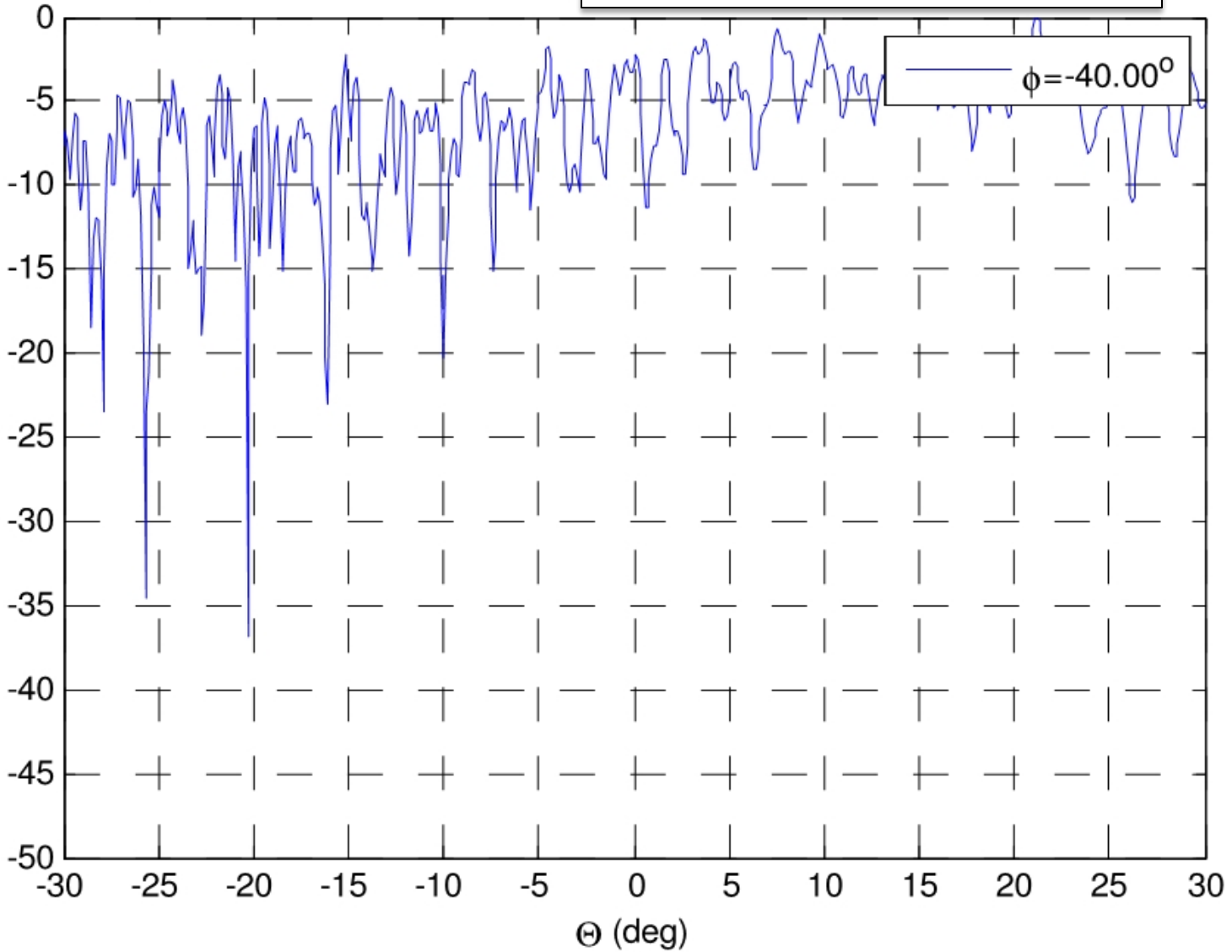


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.8 dBi

Off-axis Gain Below Peak (dBi)

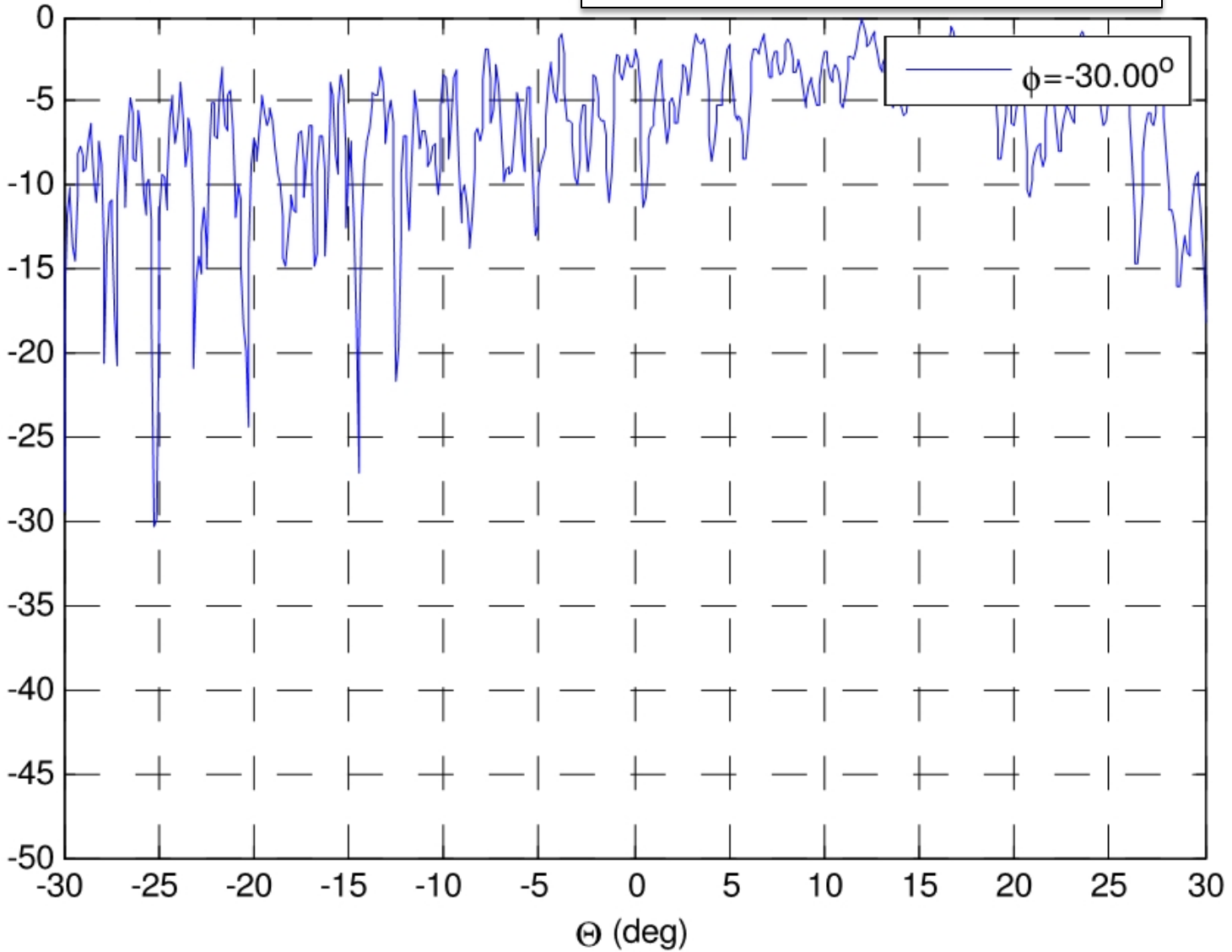


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

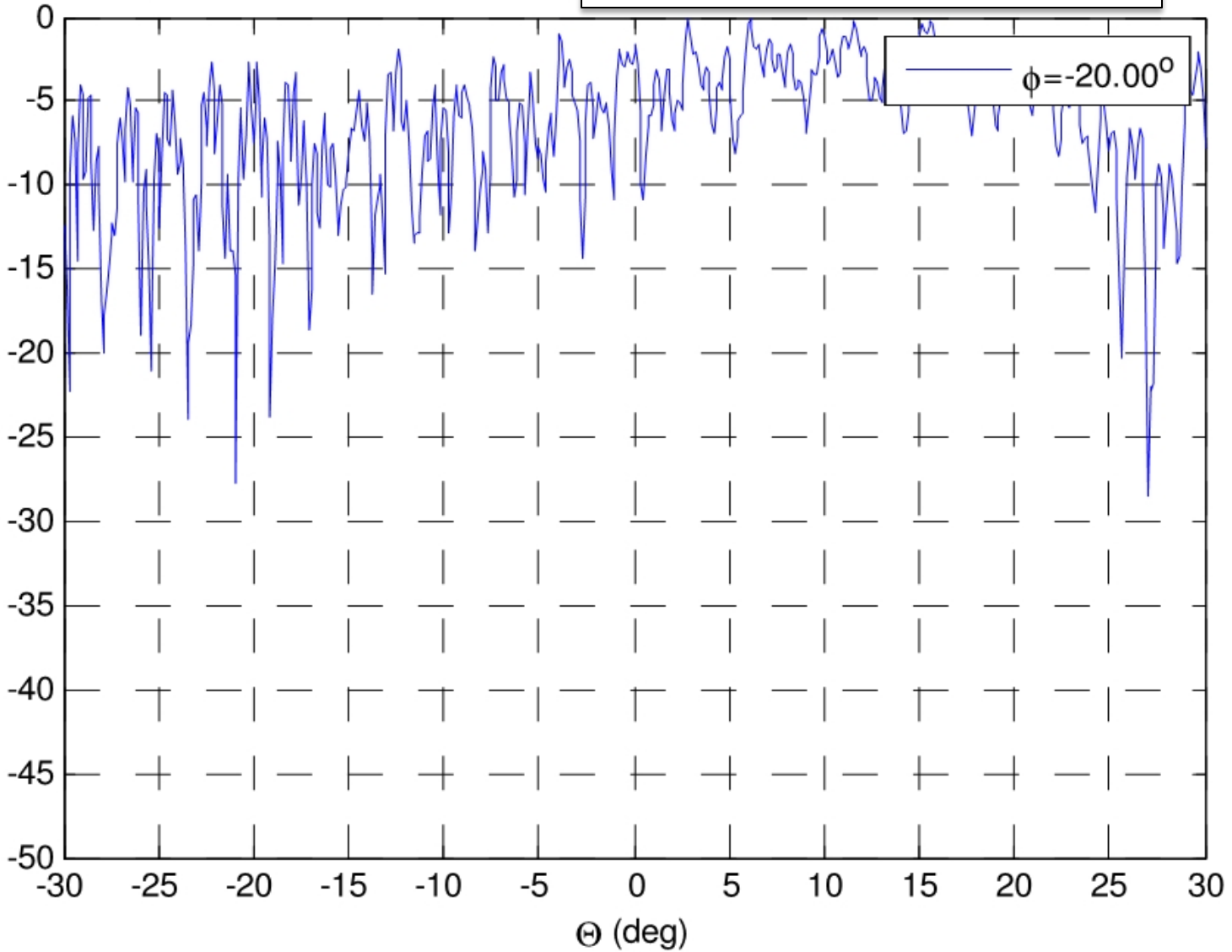


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.6 dBi

Off-axis Gain Below Peak (dBi)



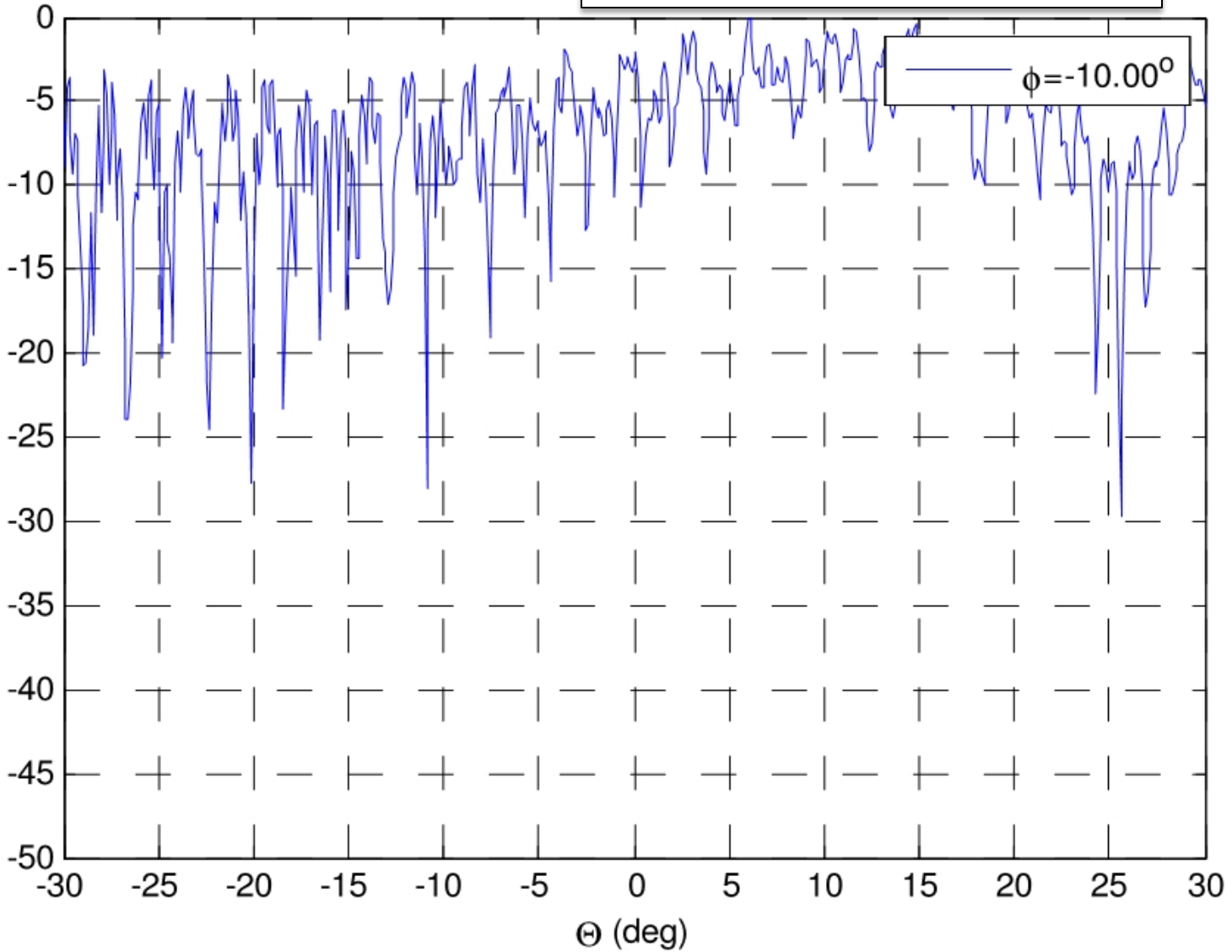


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

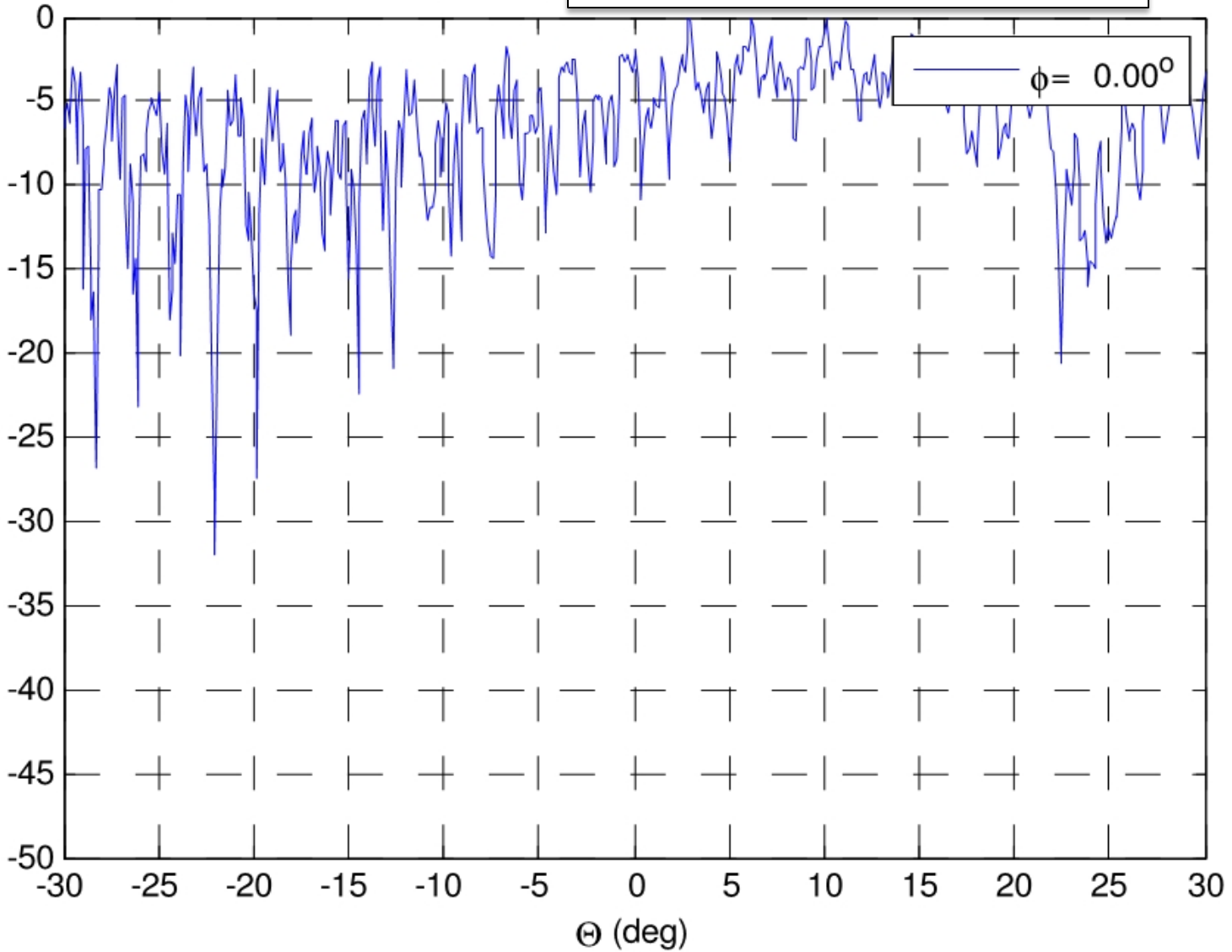


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

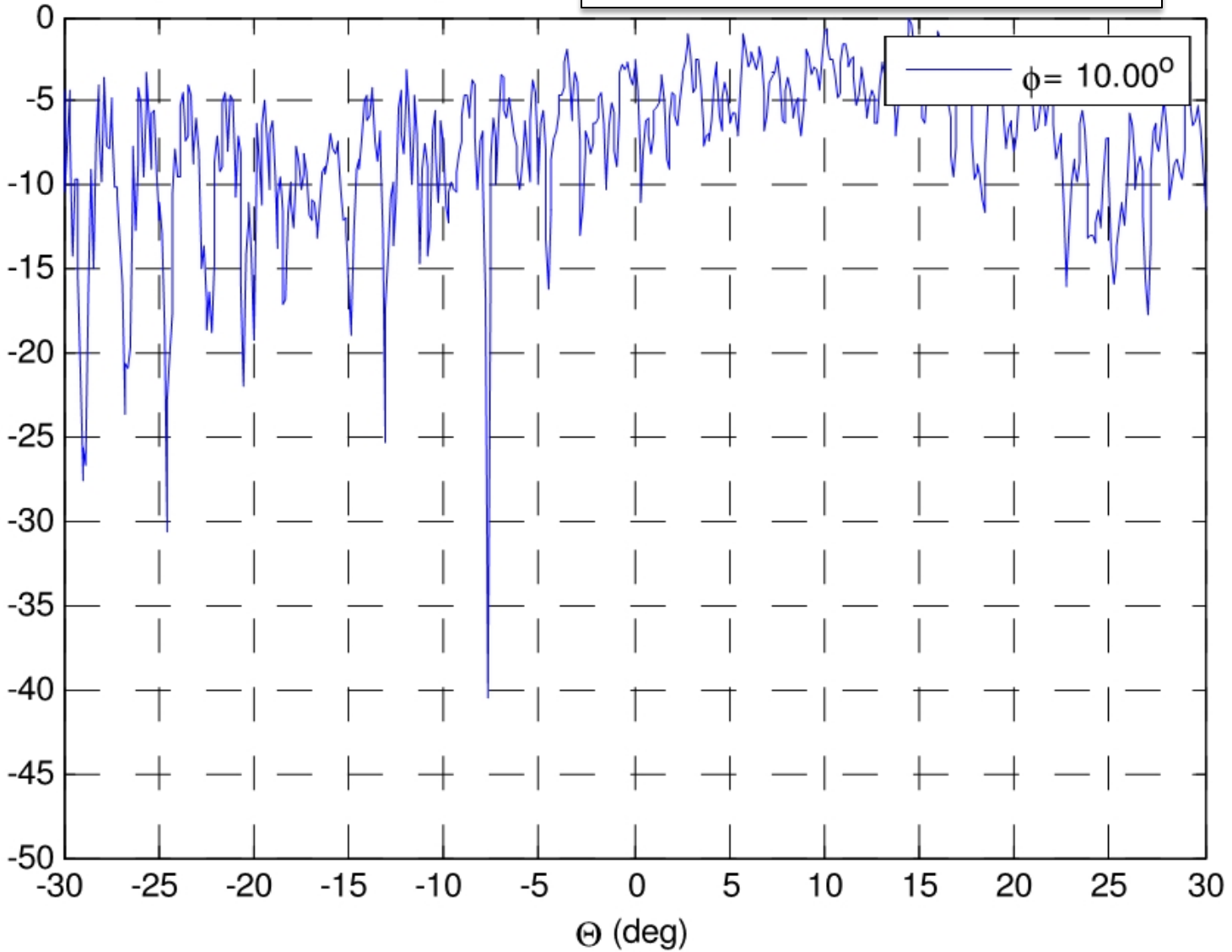


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.7 dBi

Off-axis Gain Below Peak (dBi)

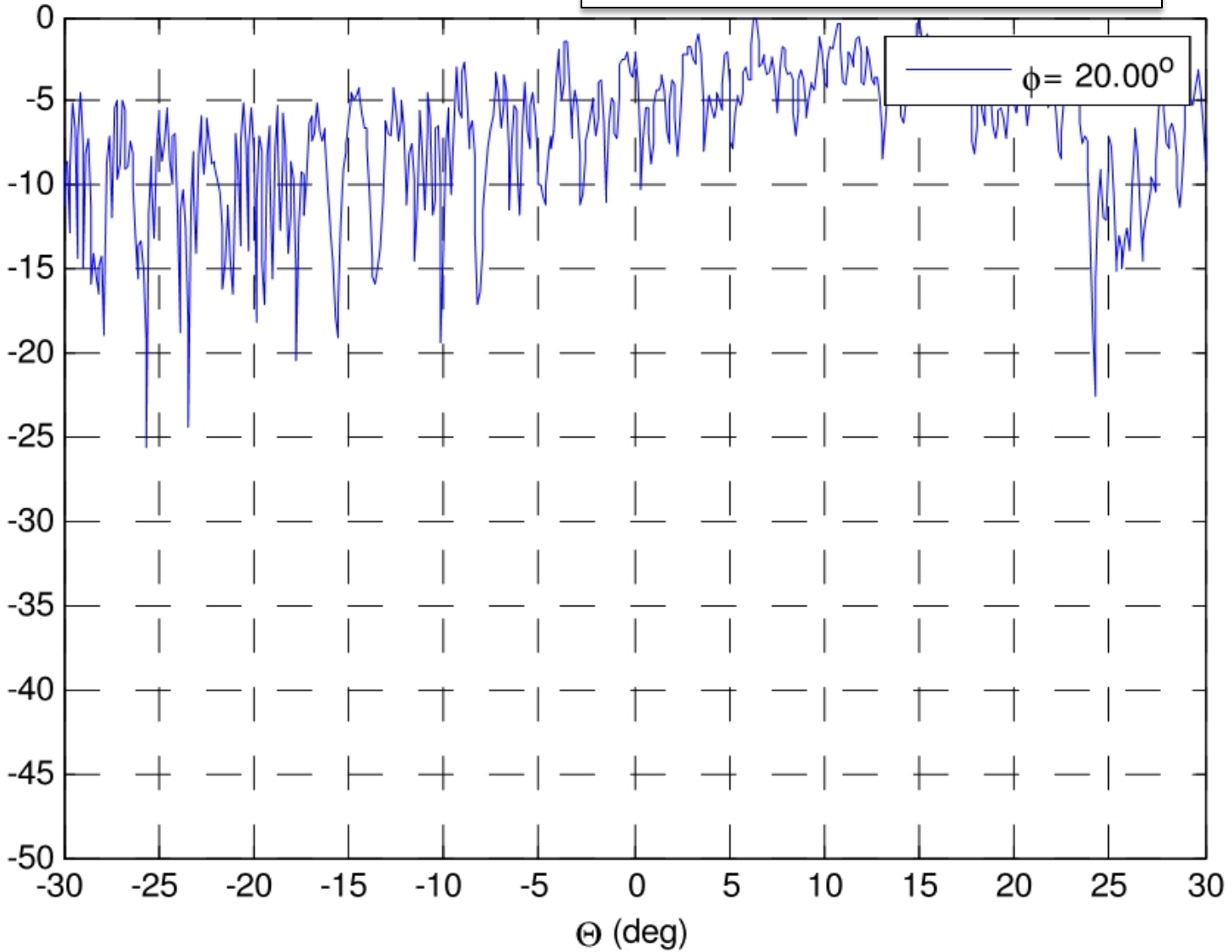


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

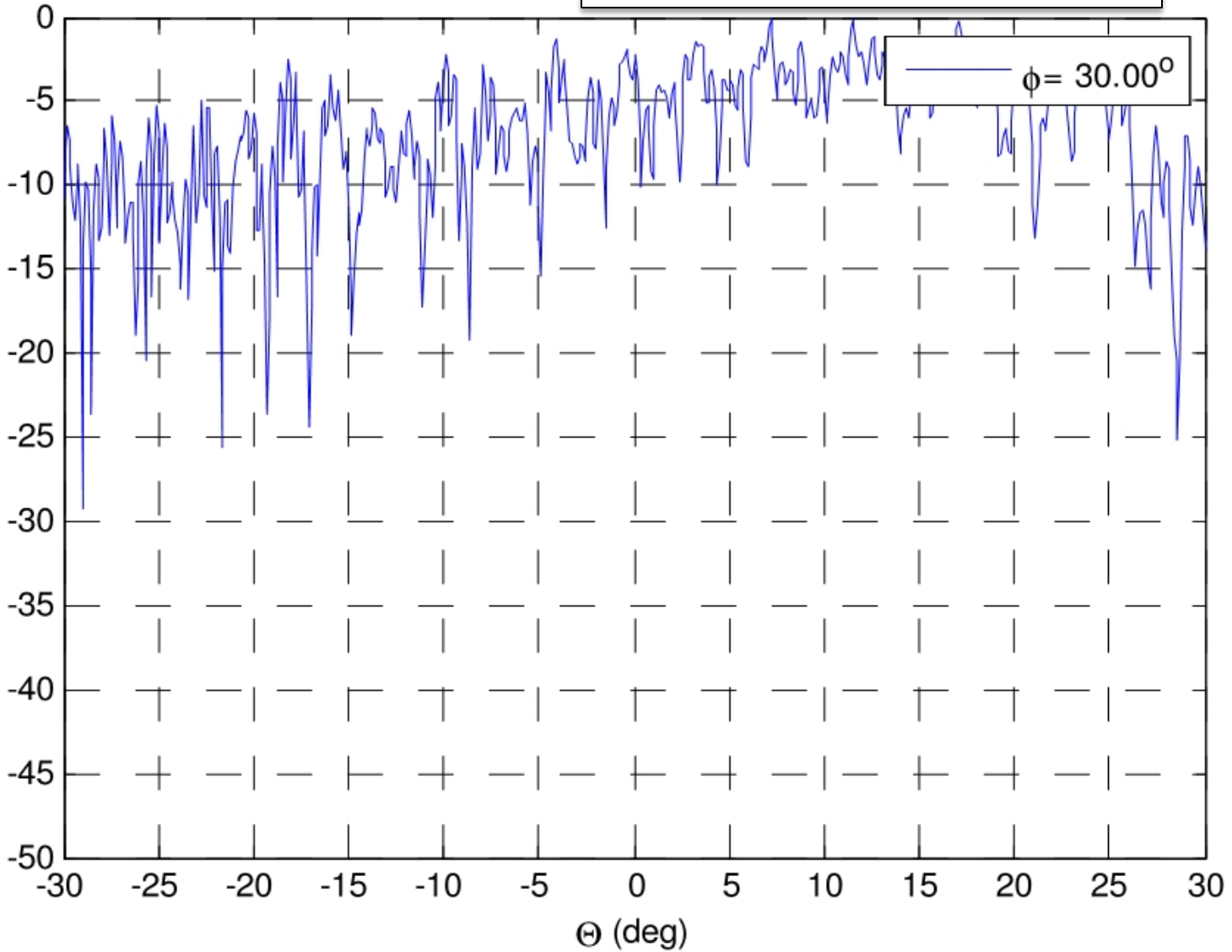


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.1 dBi

Off-axis Gain Below Peak (dBi)

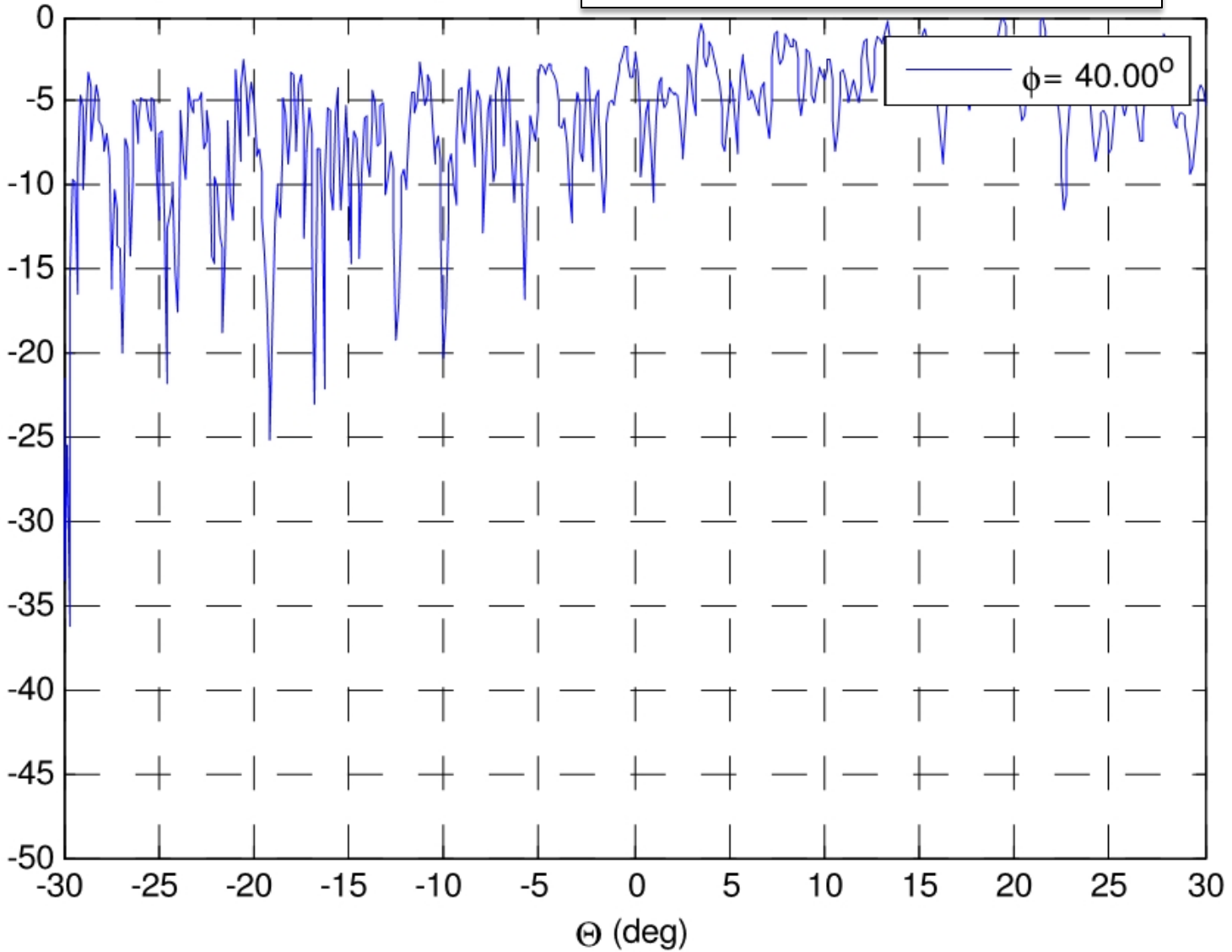


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.3 dBi

Off-axis Gain Below Peak (dBi)

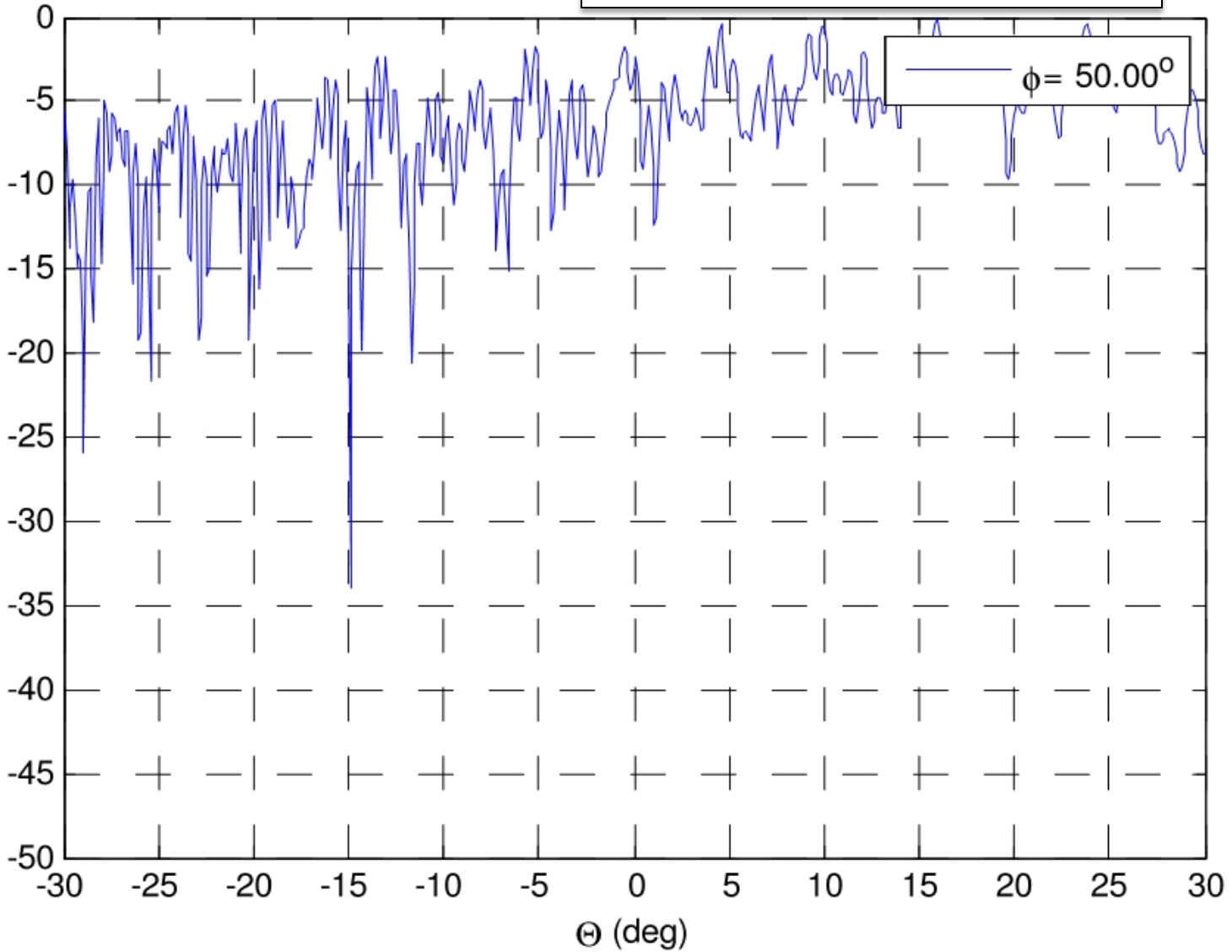


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.8 dBi

Off-axis Gain Below Peak (dBi)

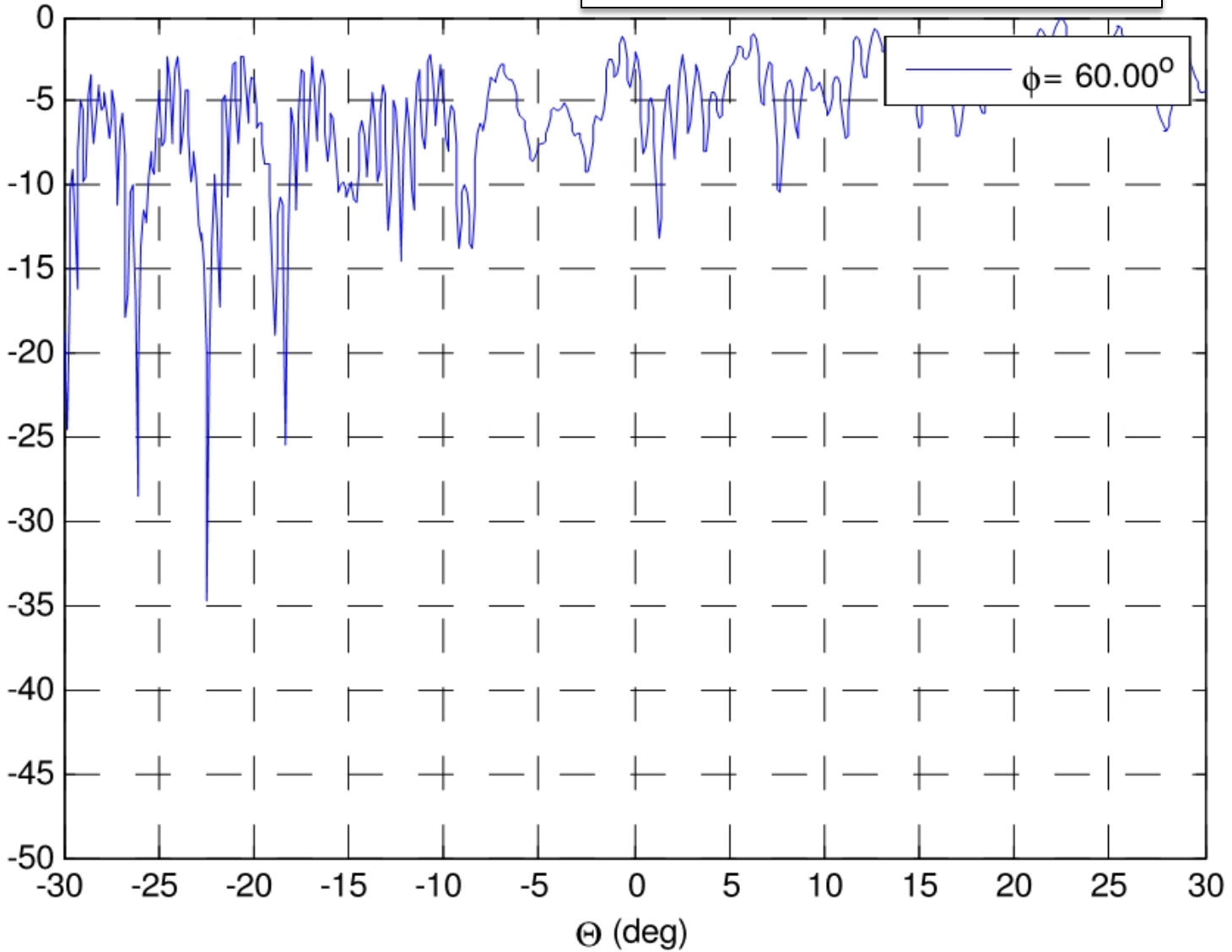


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.3 dBi

Off-axis Gain Below Peak (dBi)





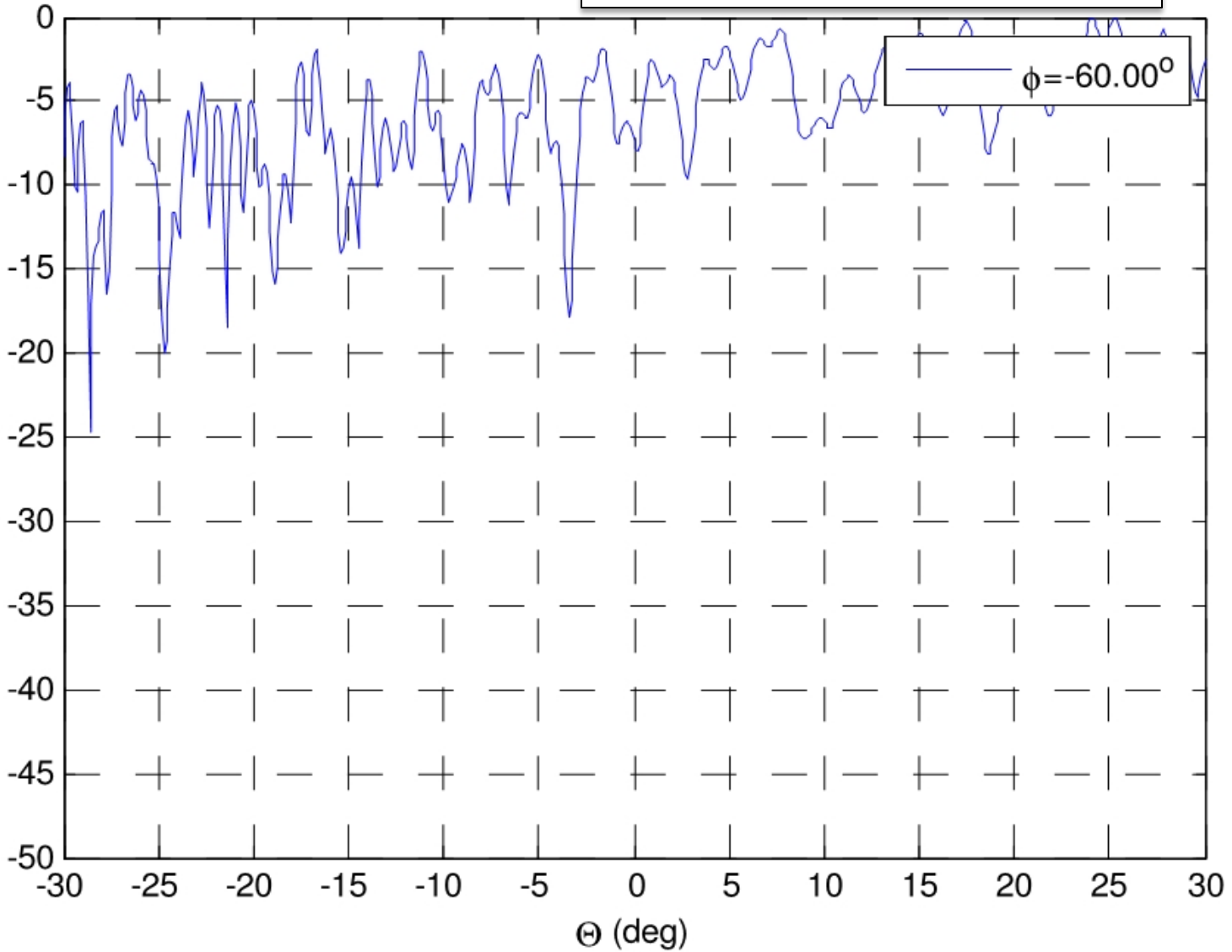
**RHCP = 17.695 GHz**

# 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)

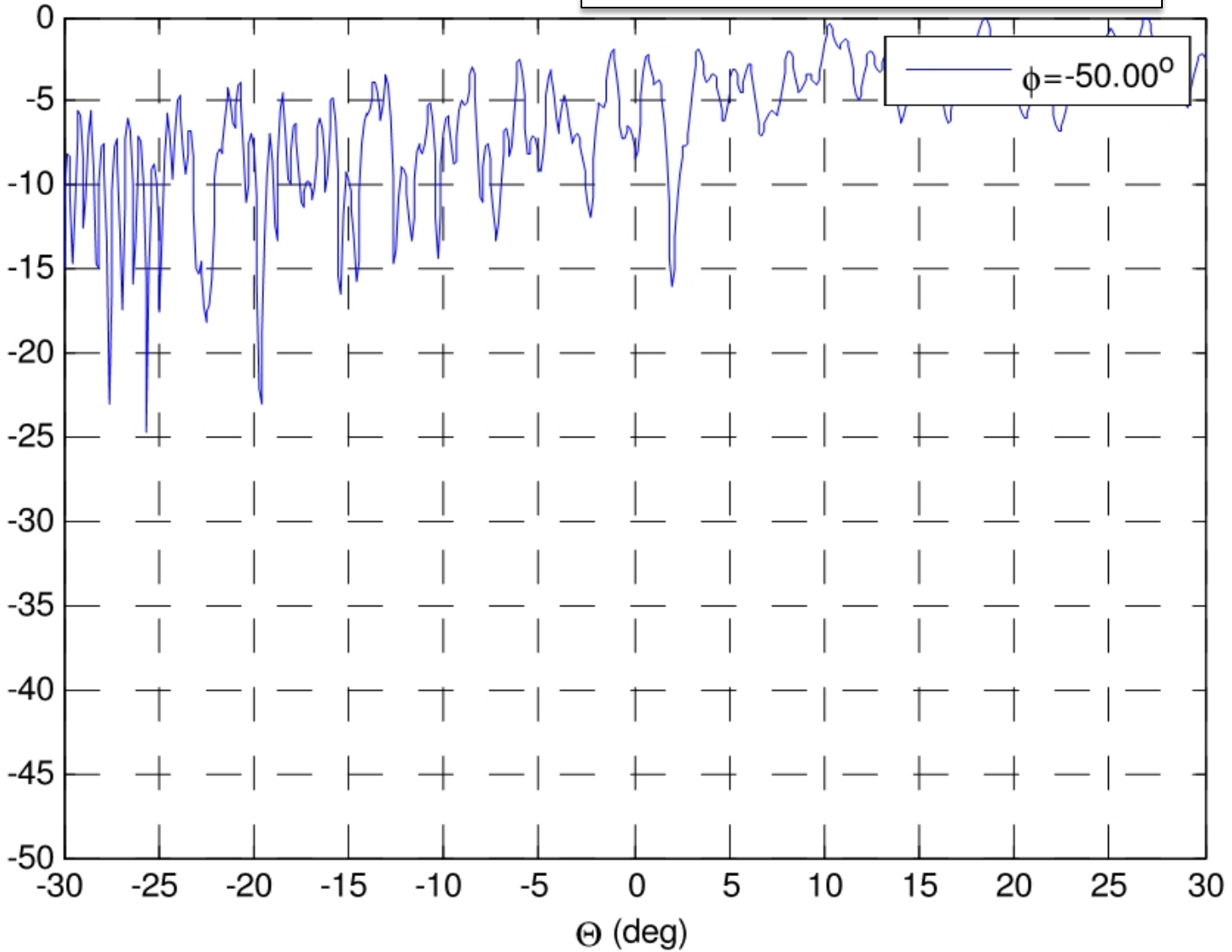


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

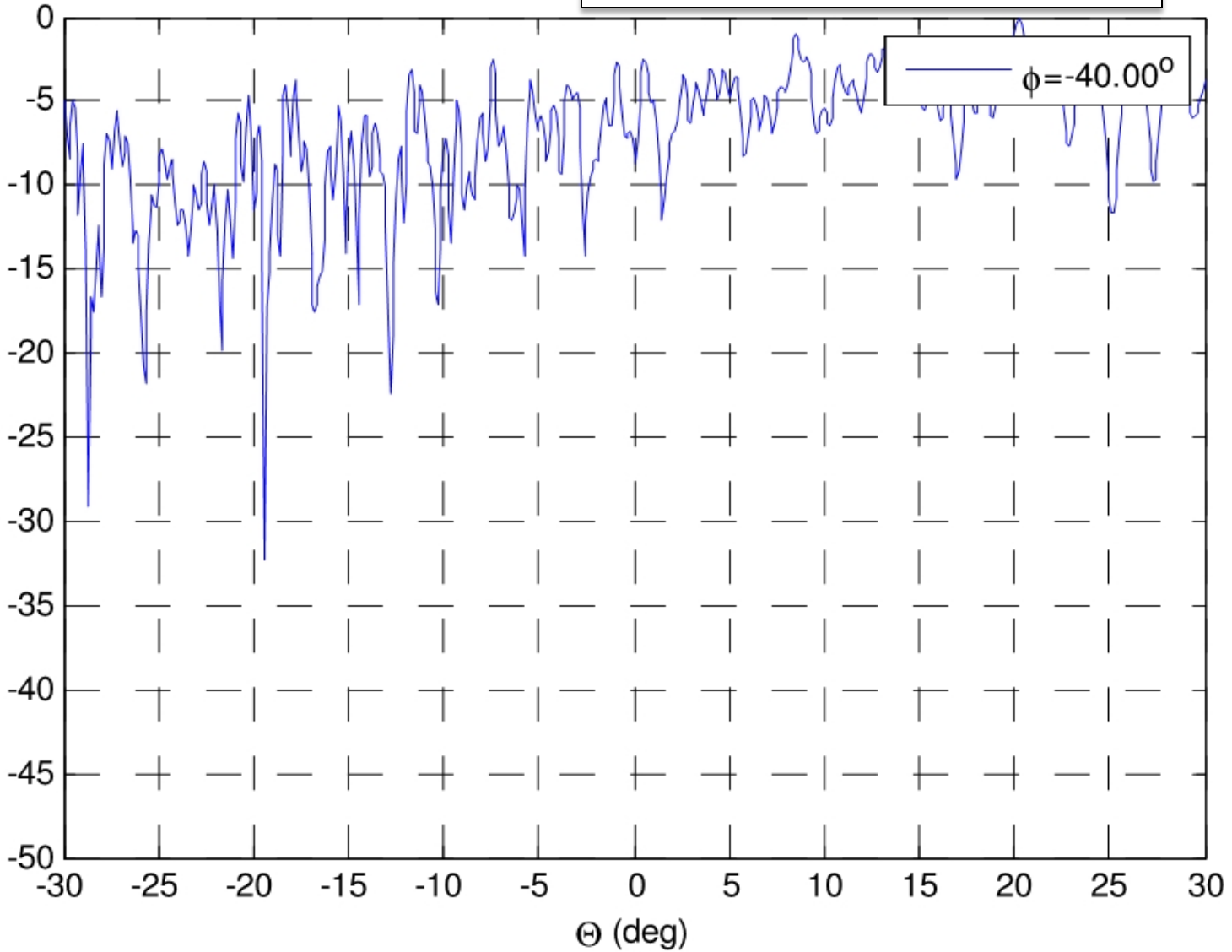


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.6 dBi

Off-axis Gain Below Peak (dBi)

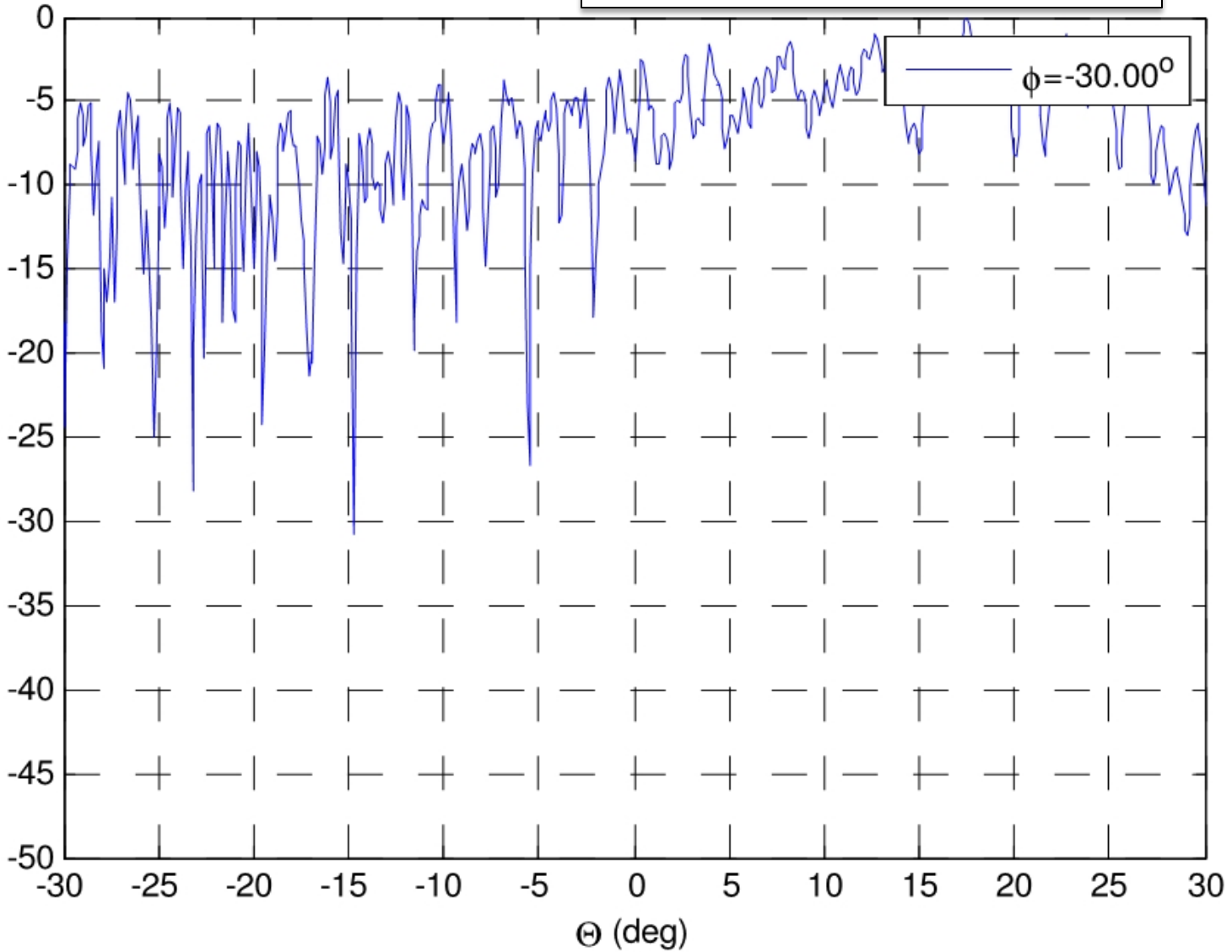


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.6 dBi

Off-axis Gain Below Peak (dBi)

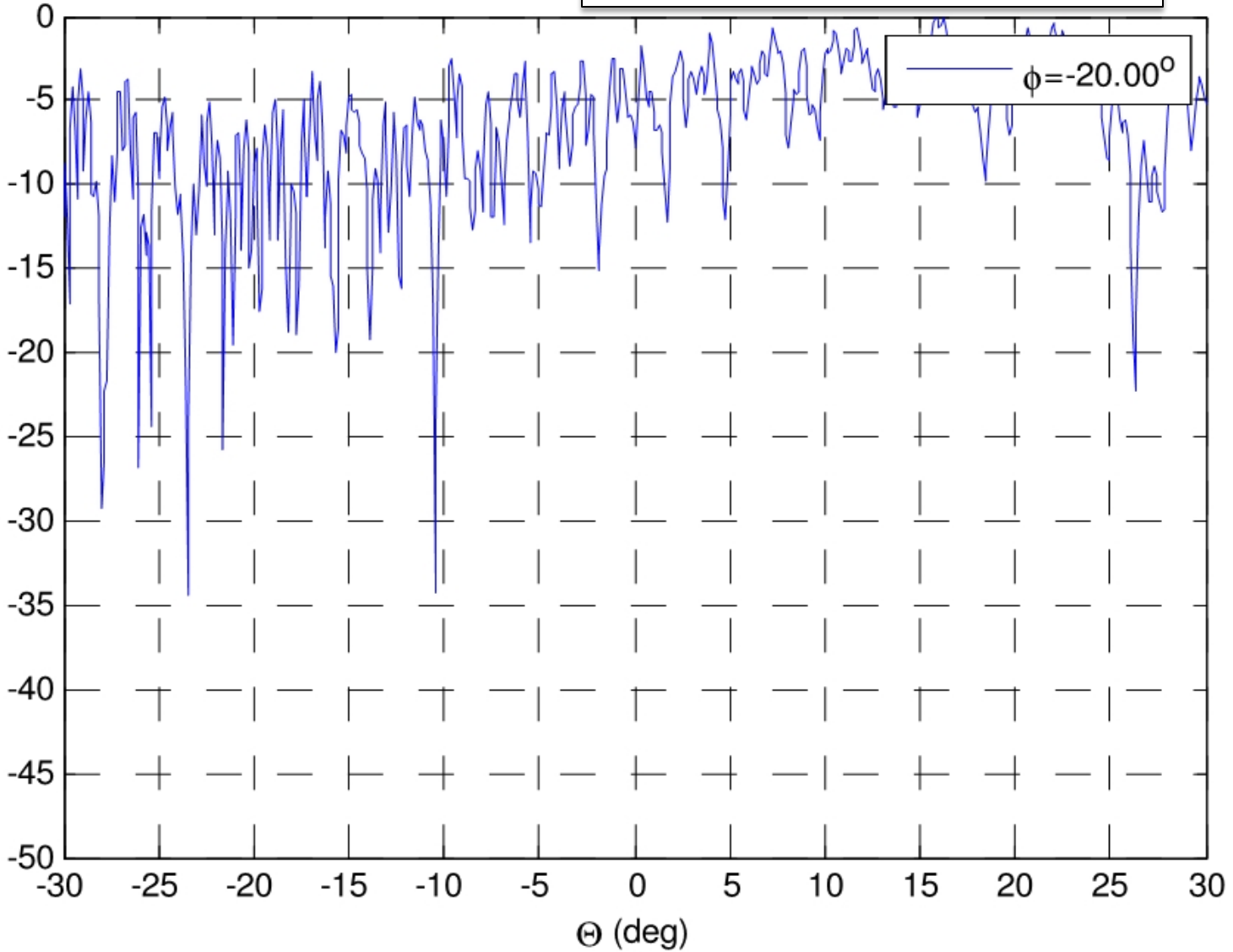


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

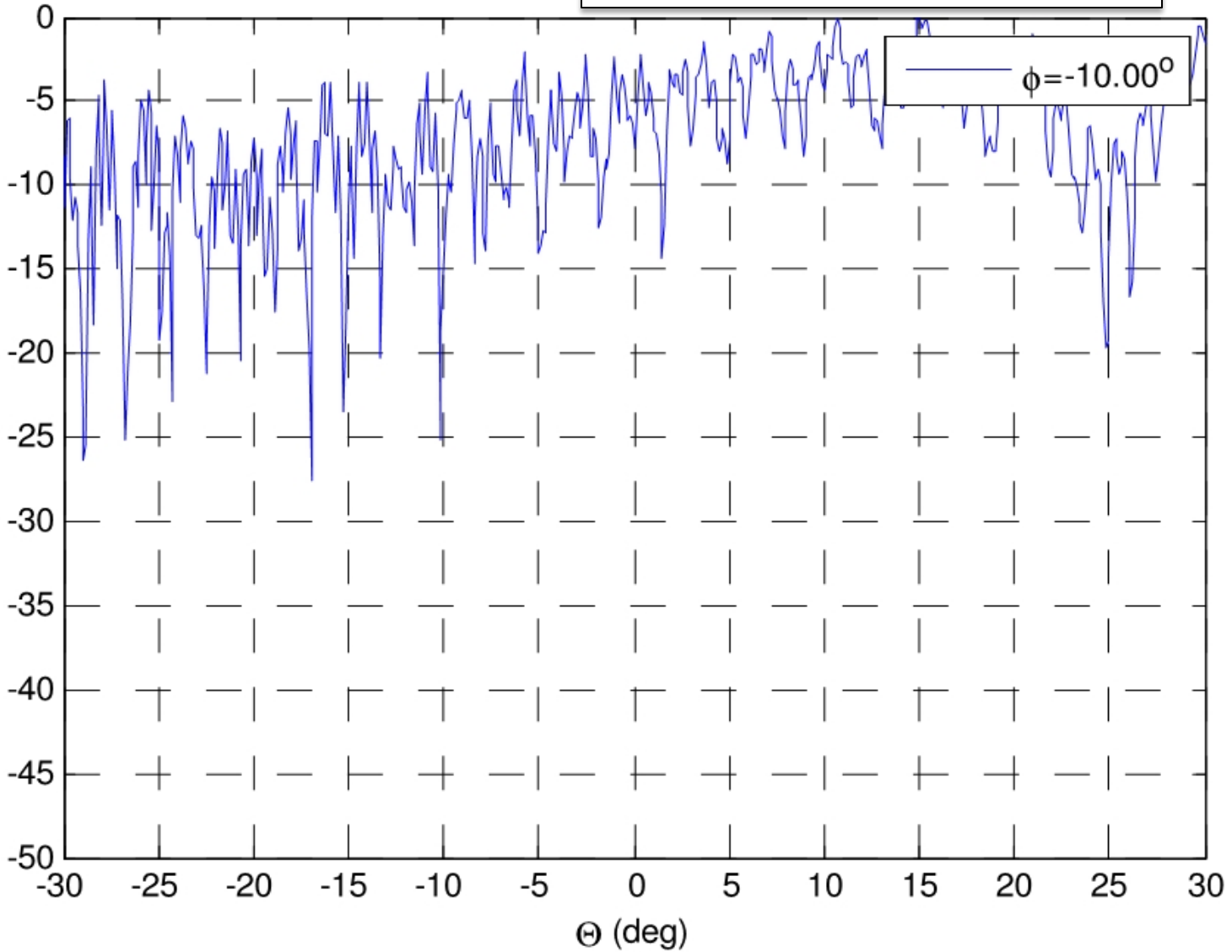


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.2 dBi

Off-axis Gain Below Peak (dBi)

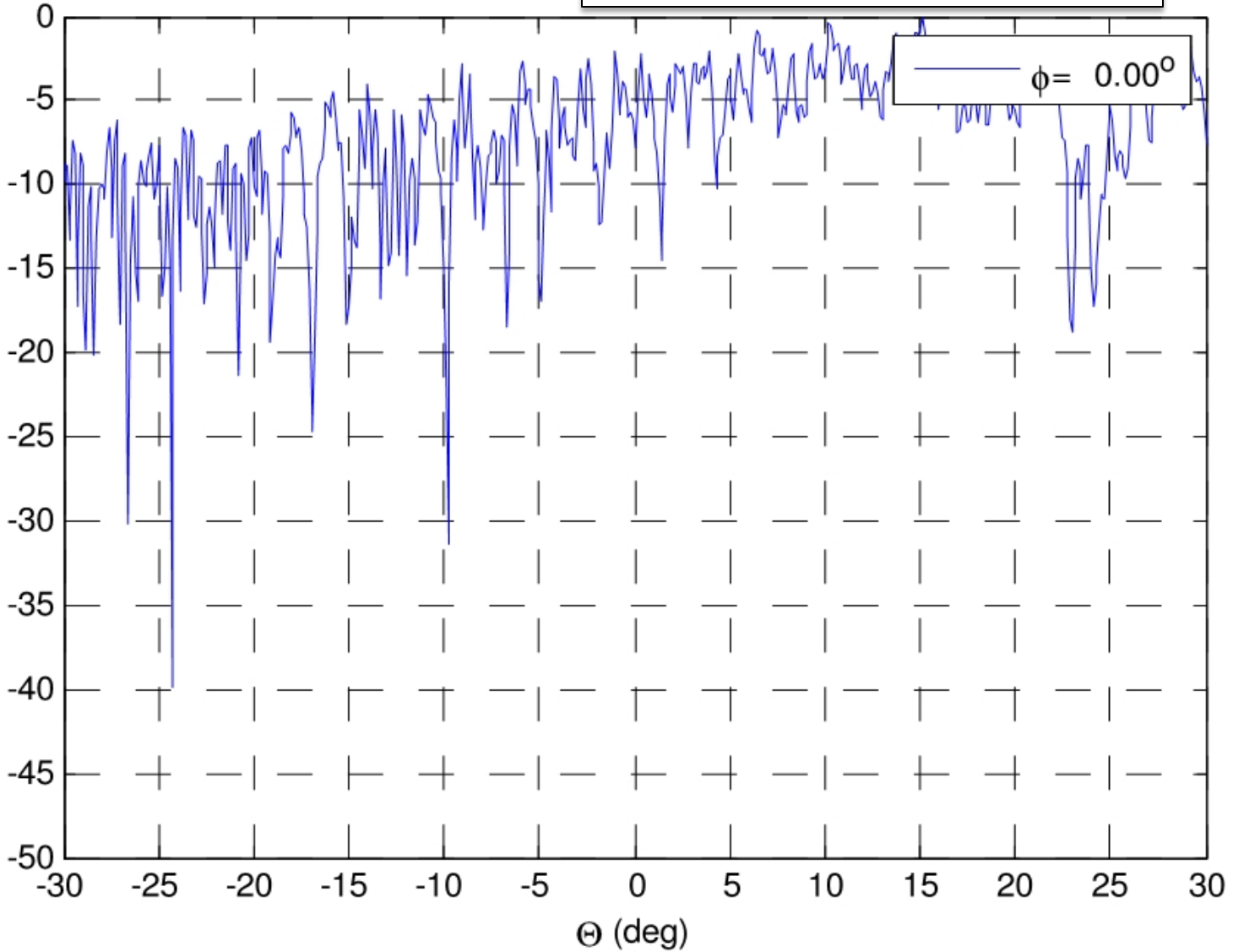


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.0 dBi

Off-axis Gain Below Peak (dBi)



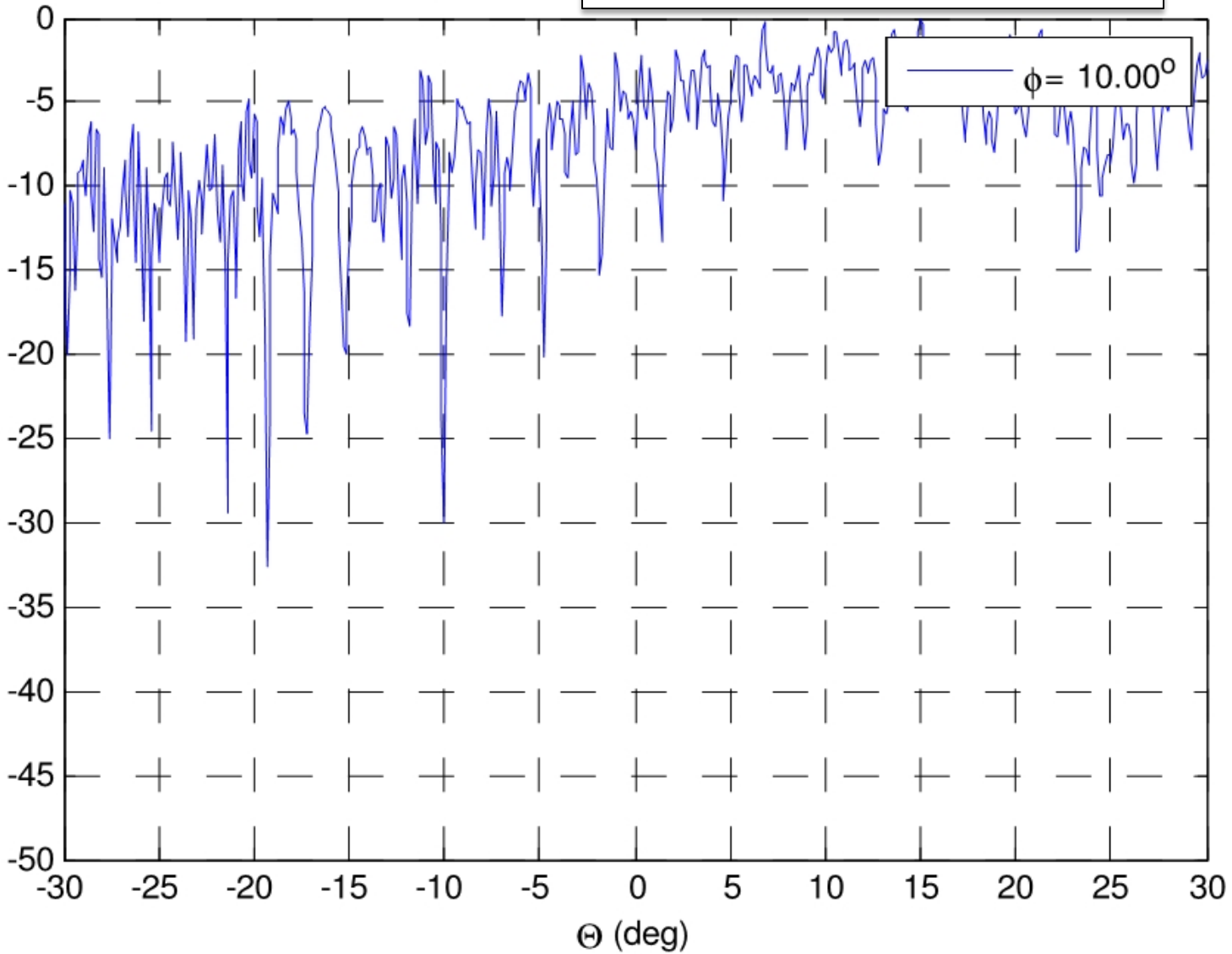


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.9 dBi

Off-axis Gain Below Peak (dBi)

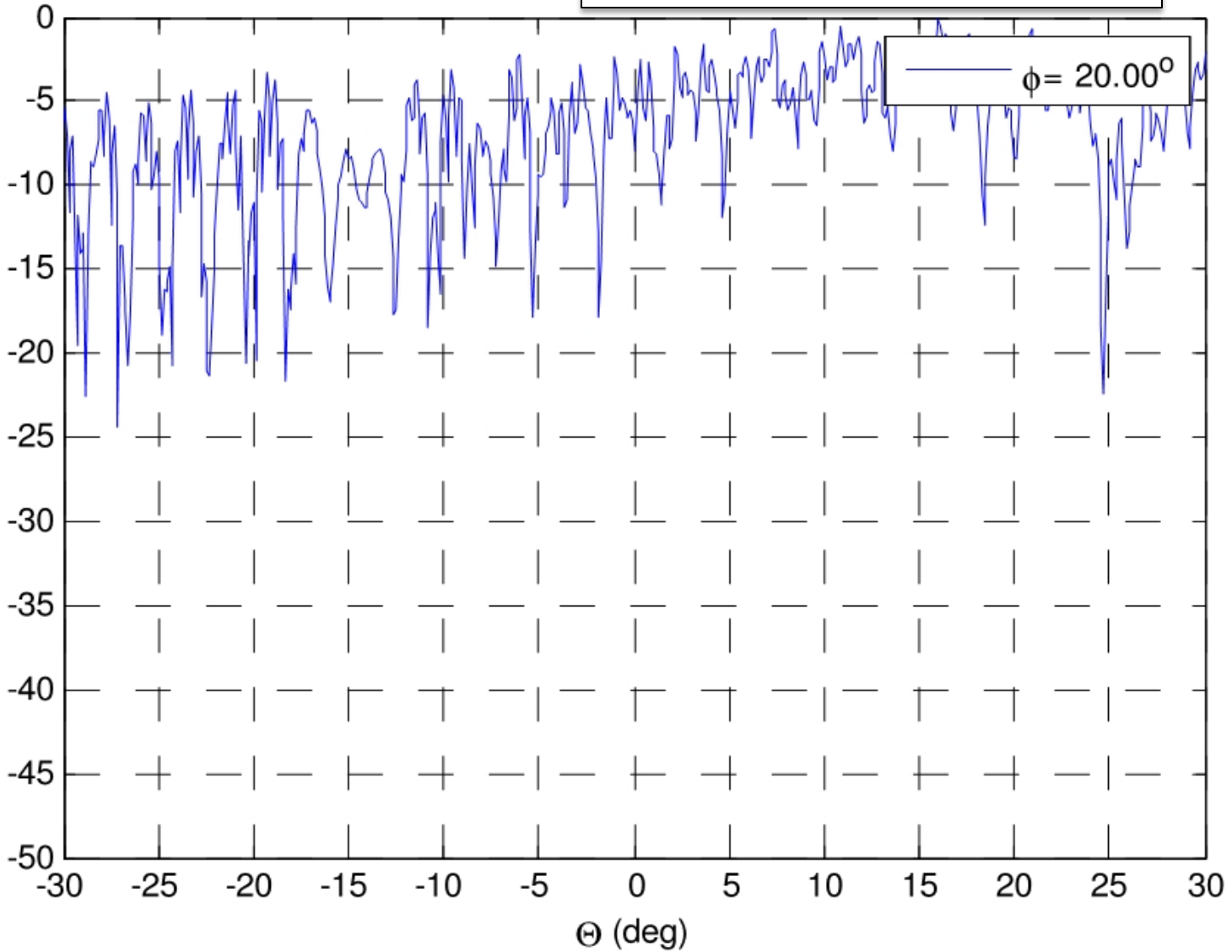


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.9 dBi

Off-axis Gain Below Peak (dBi)

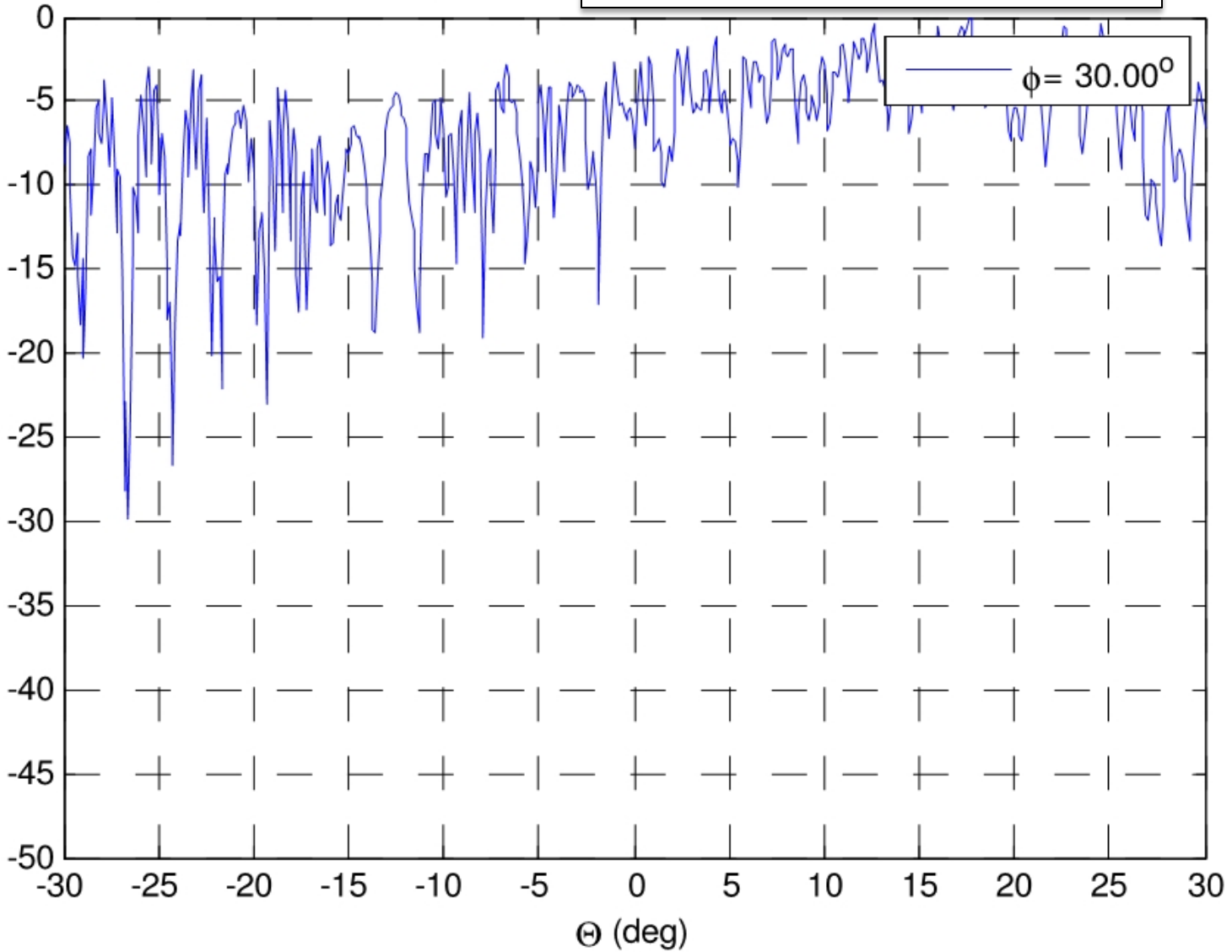


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.0 dBi

Off-axis Gain Below Peak (dBi)

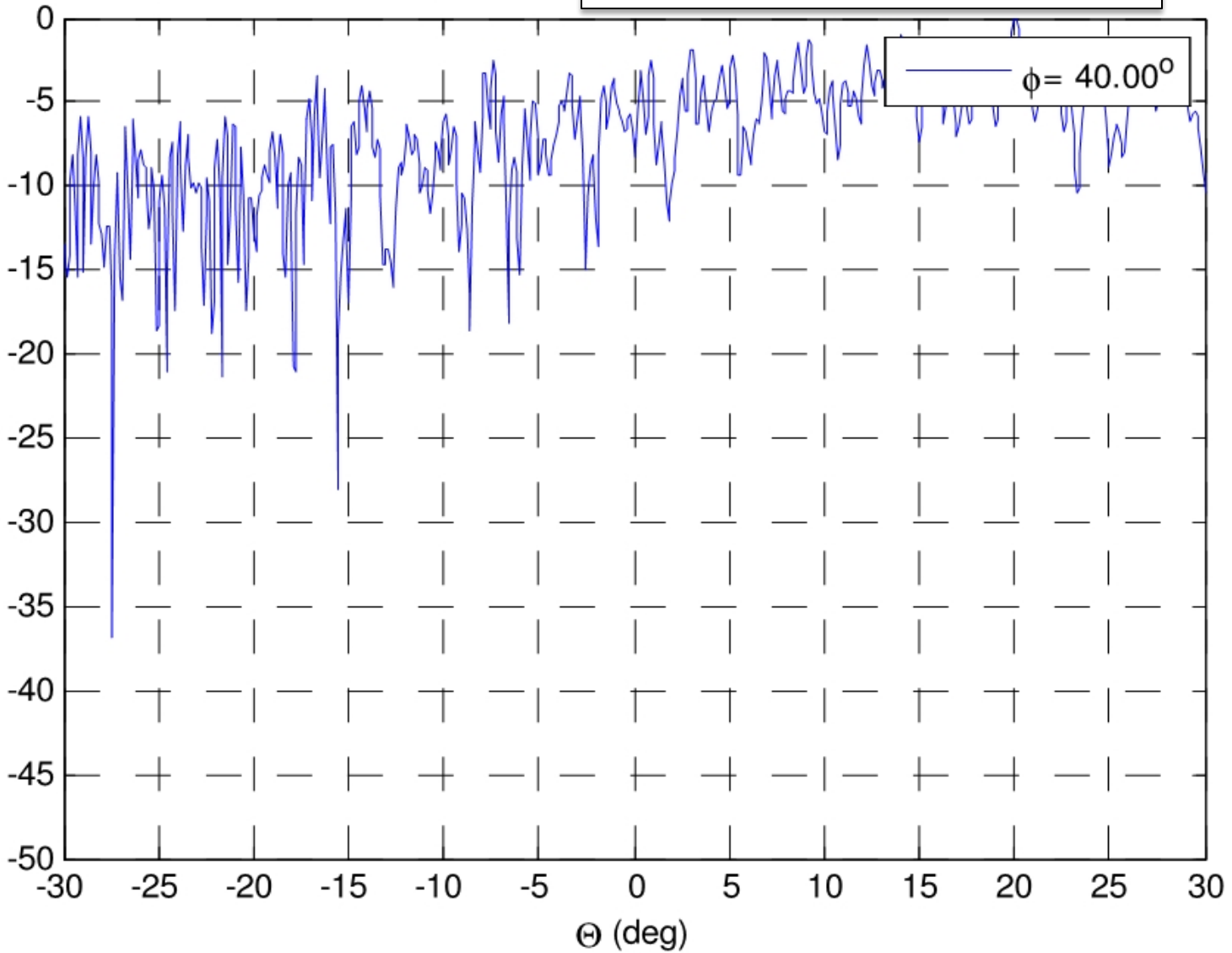


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.5 dBi

Off-axis Gain Below Peak (dBi)

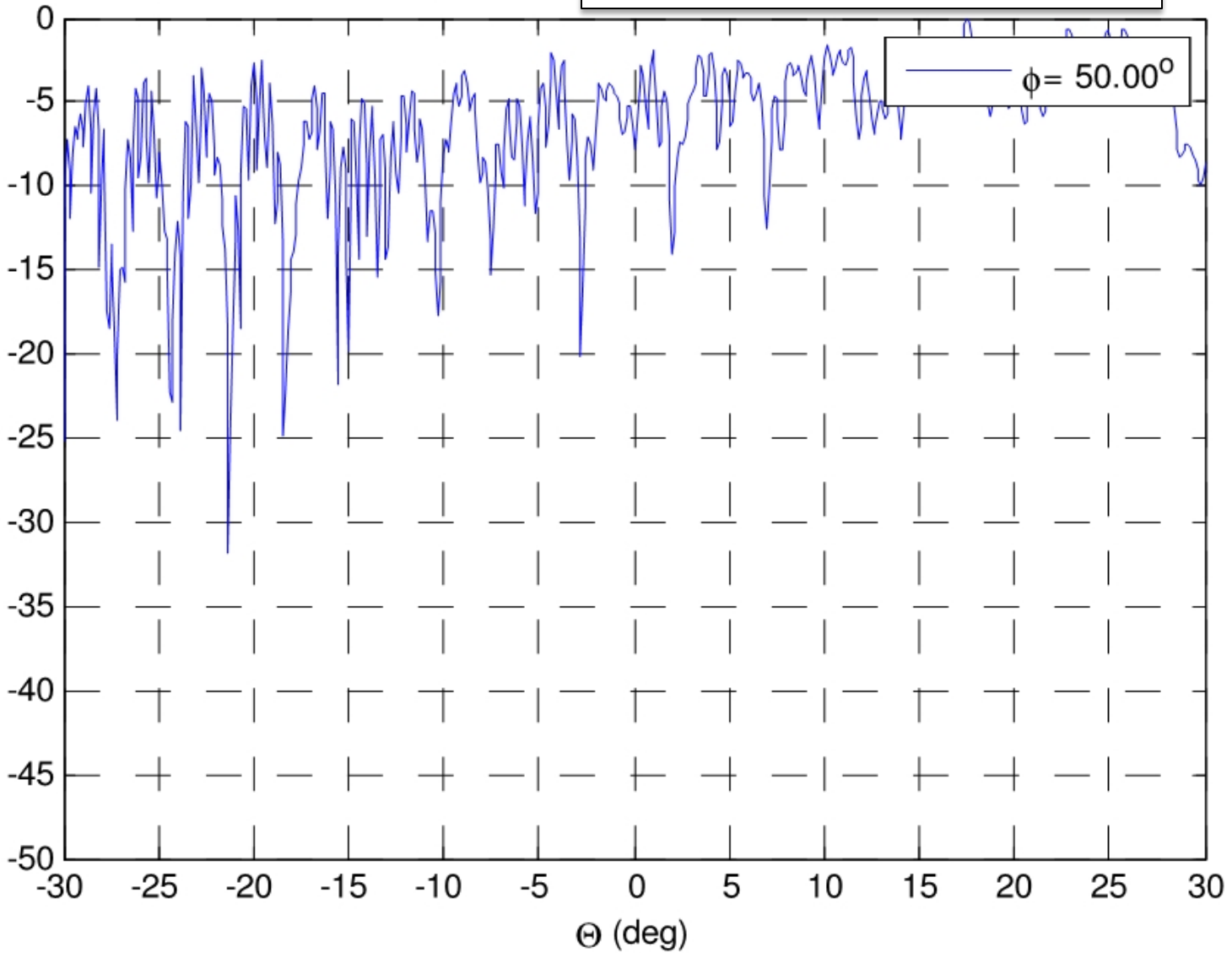


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.0 dBi

Off-axis Gain Below Peak (dBi)

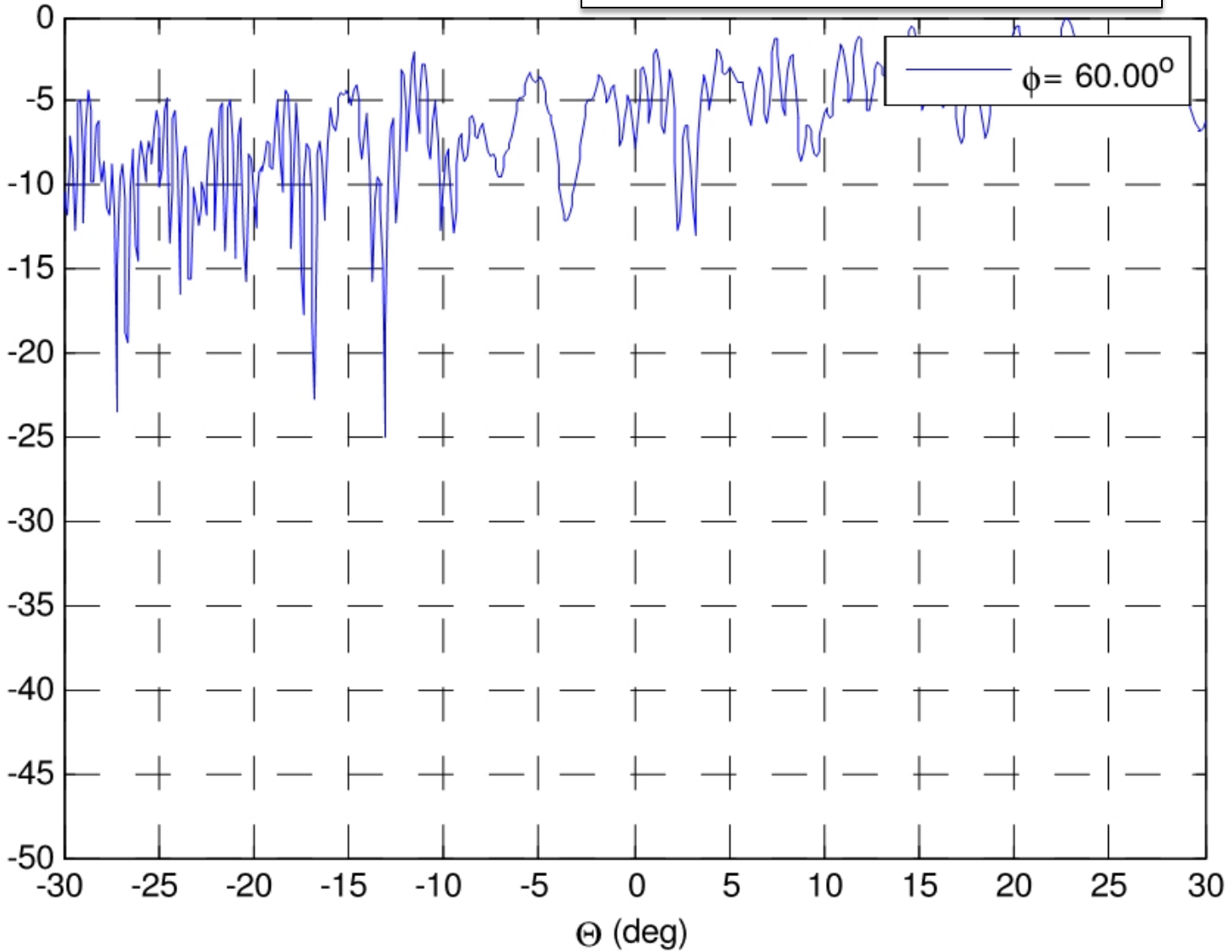


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.1 dBi

Off-axis Gain Below Peak (dBi)



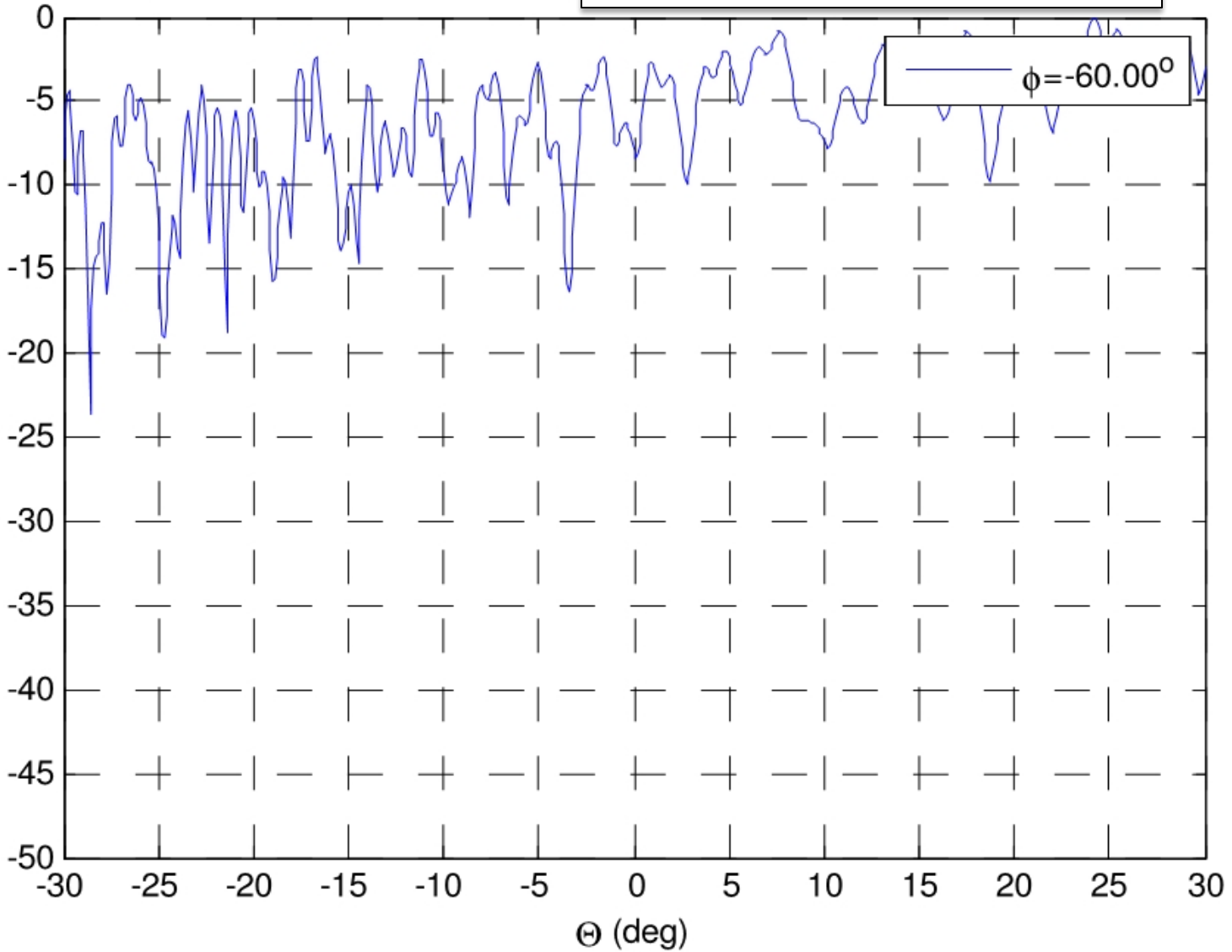
LHCP = 17.695 GHz

# 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)



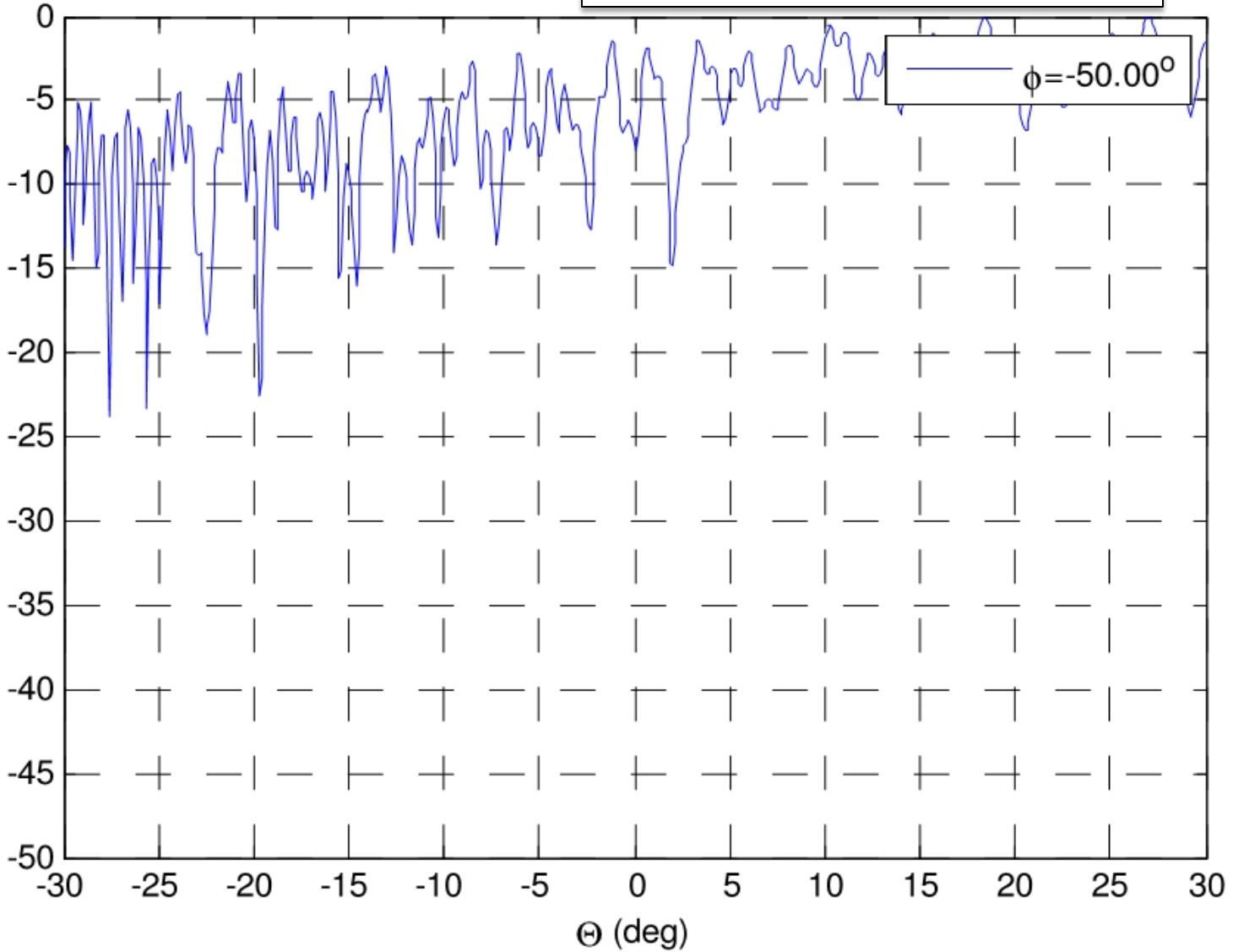


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.4 dBi

Off-axis Gain Below Peak (dBi)

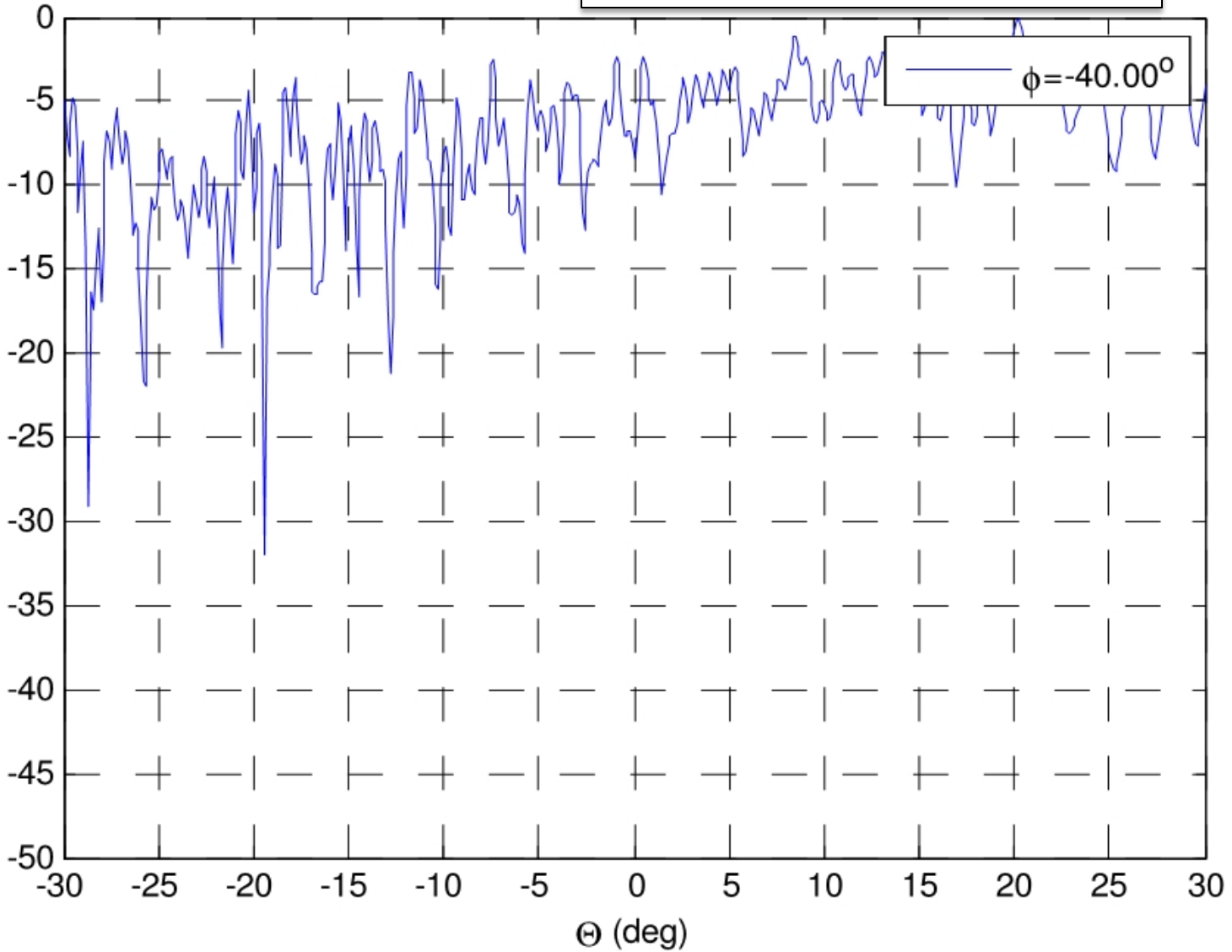


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.7 dBi

Off-axis Gain Below Peak (dBi)

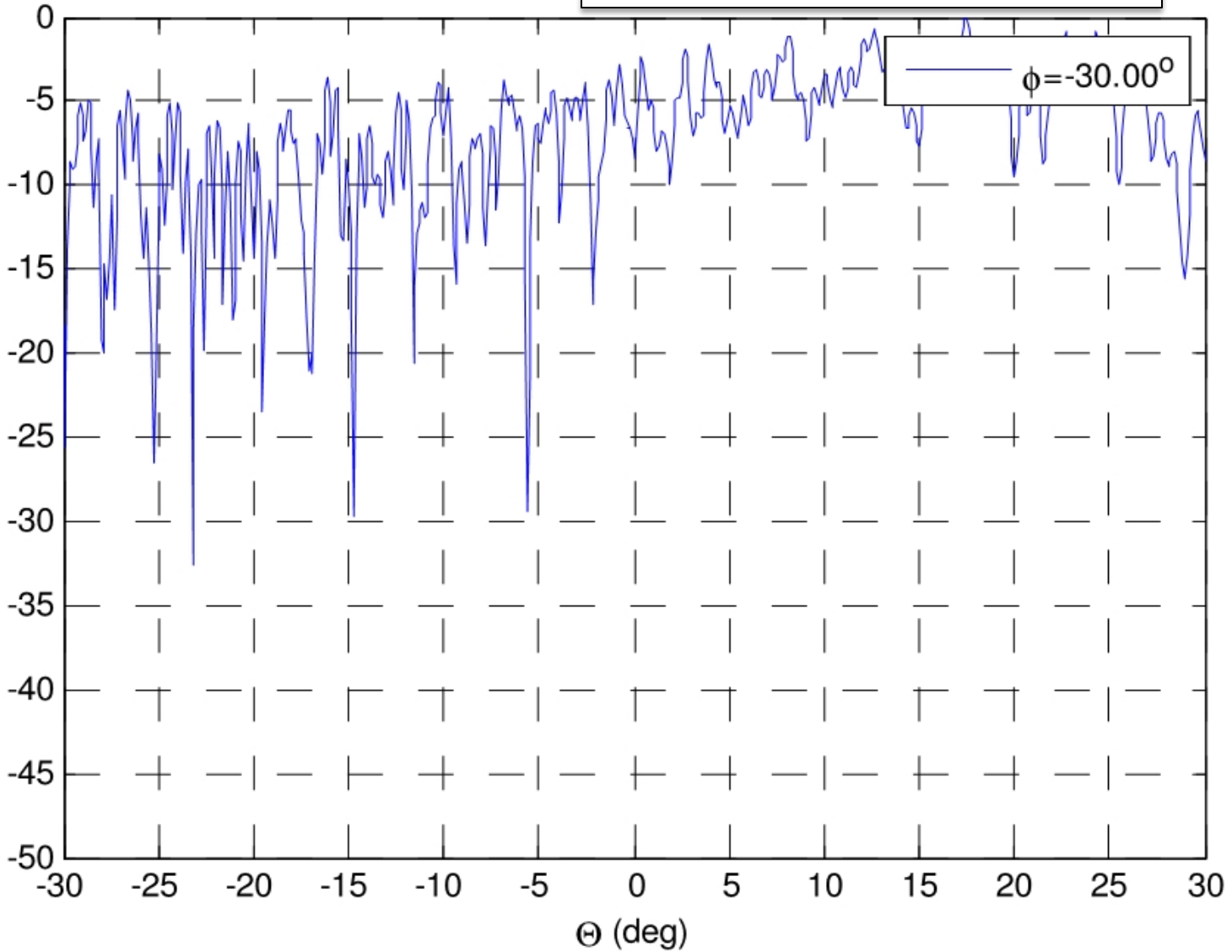


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.8 dBi

Off-axis Gain Below Peak (dBi)

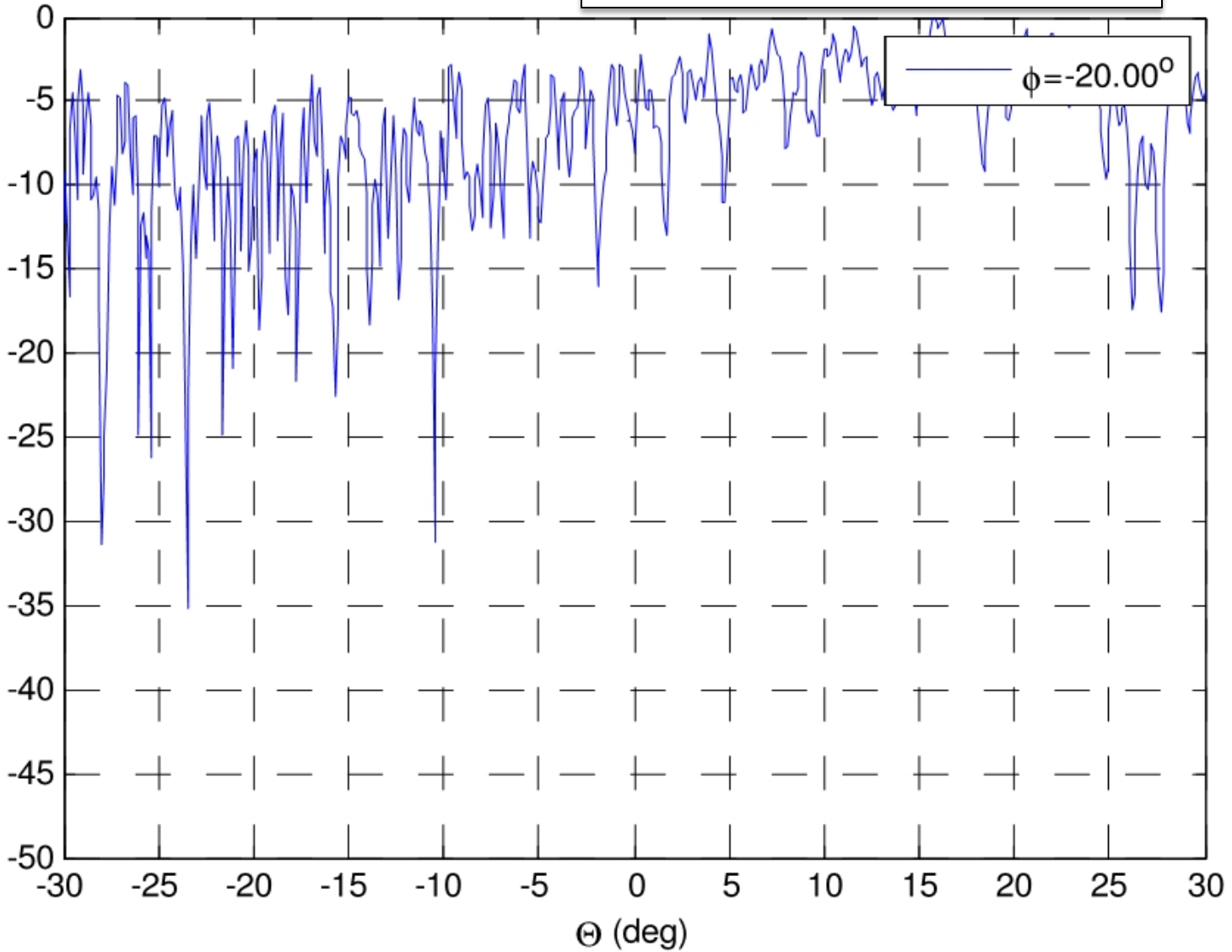


# Normalized pattern cuts - farfield

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

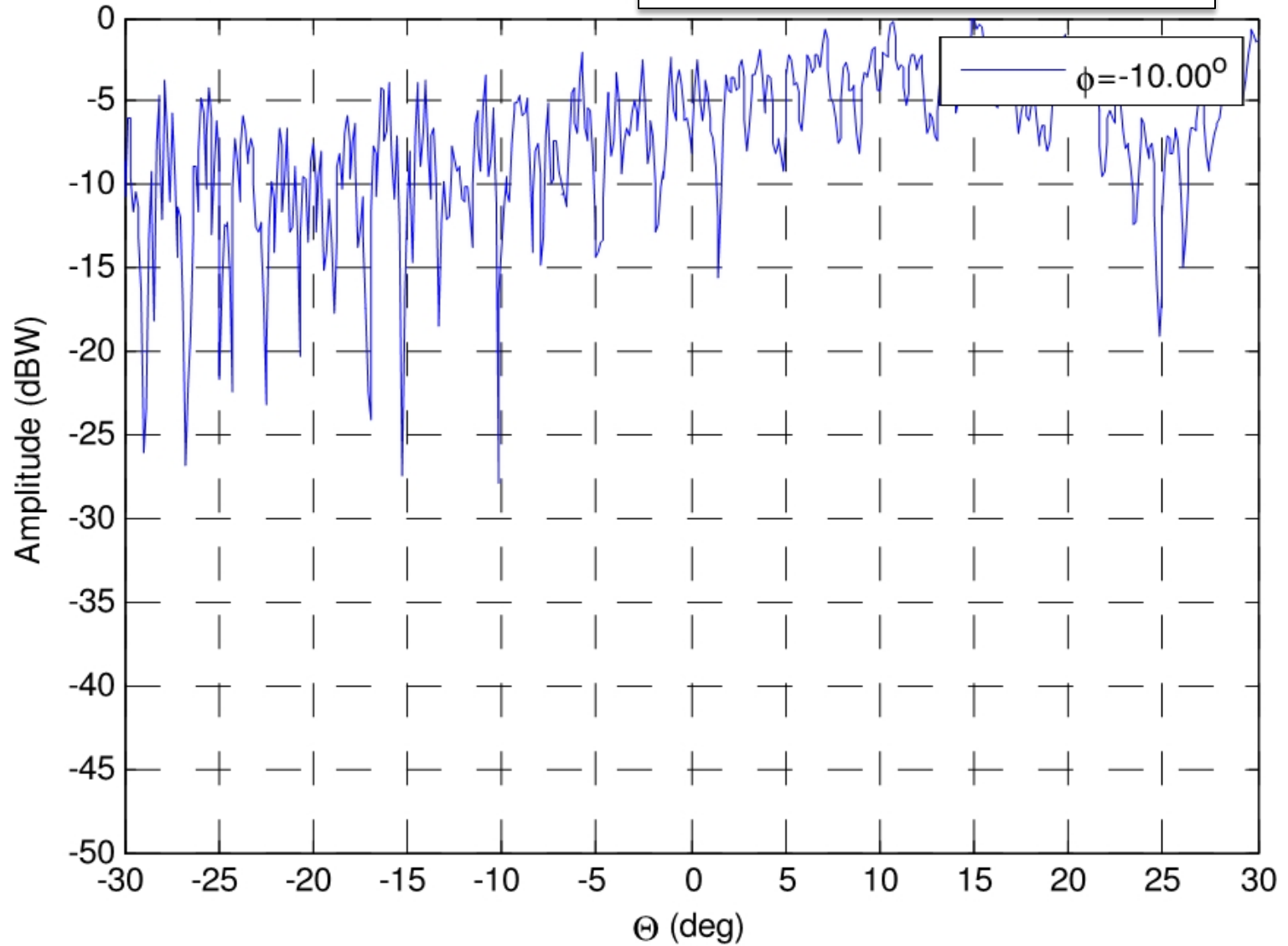
Peak Off-axis Gain = -25.1 dBi

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

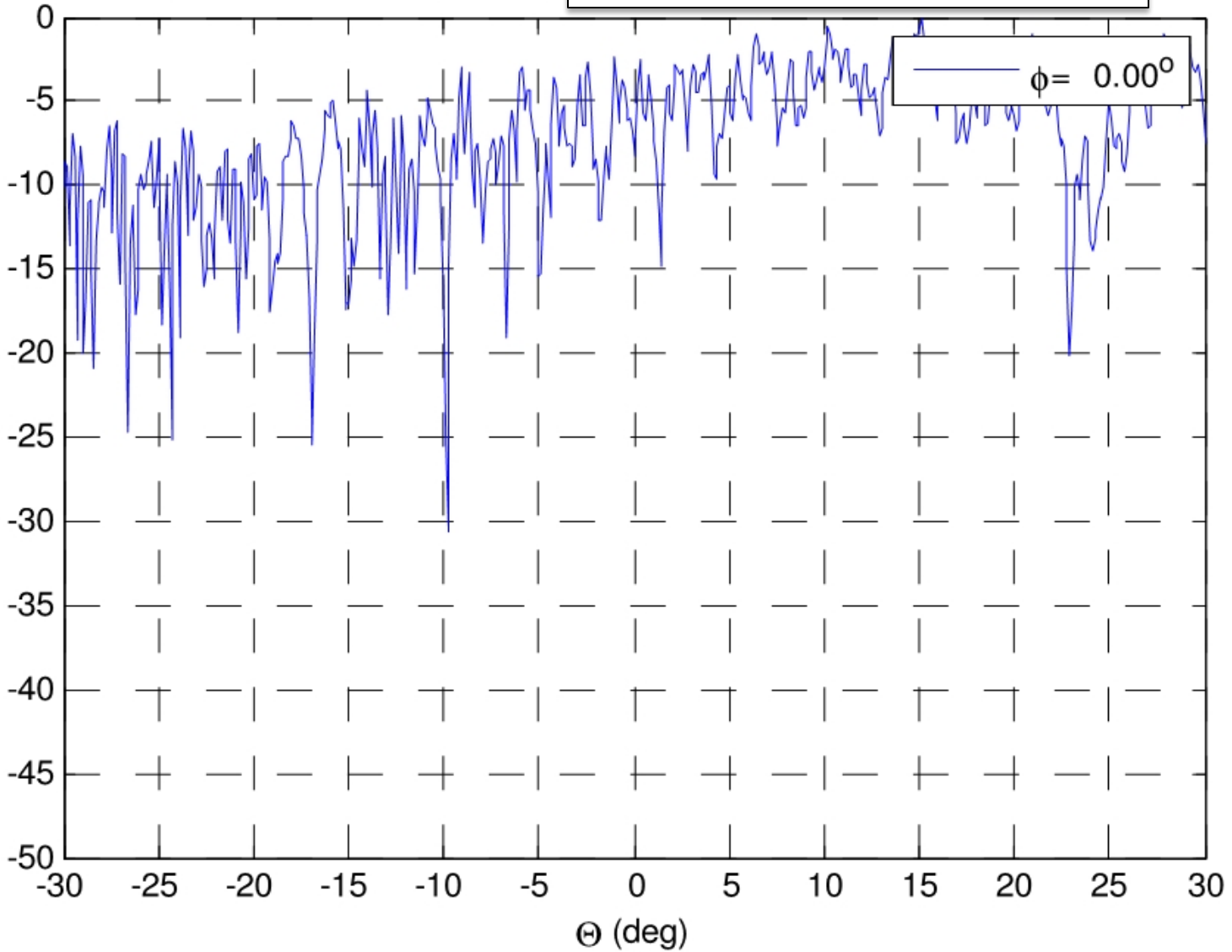


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.8 dBi

Off-axis Gain Below Peak (dBi)

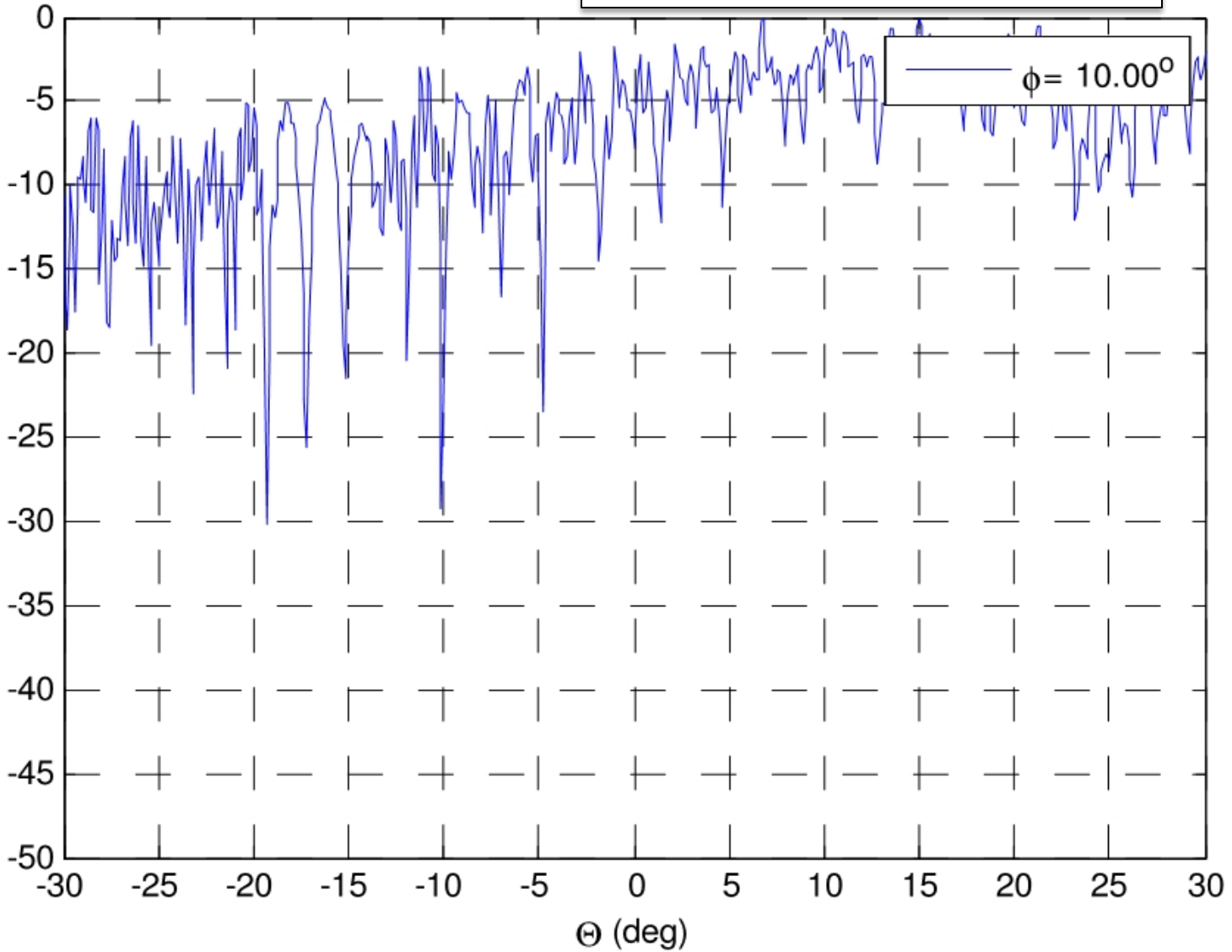


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.3 dBi

Off-axis Gain Below Peak (dBi)

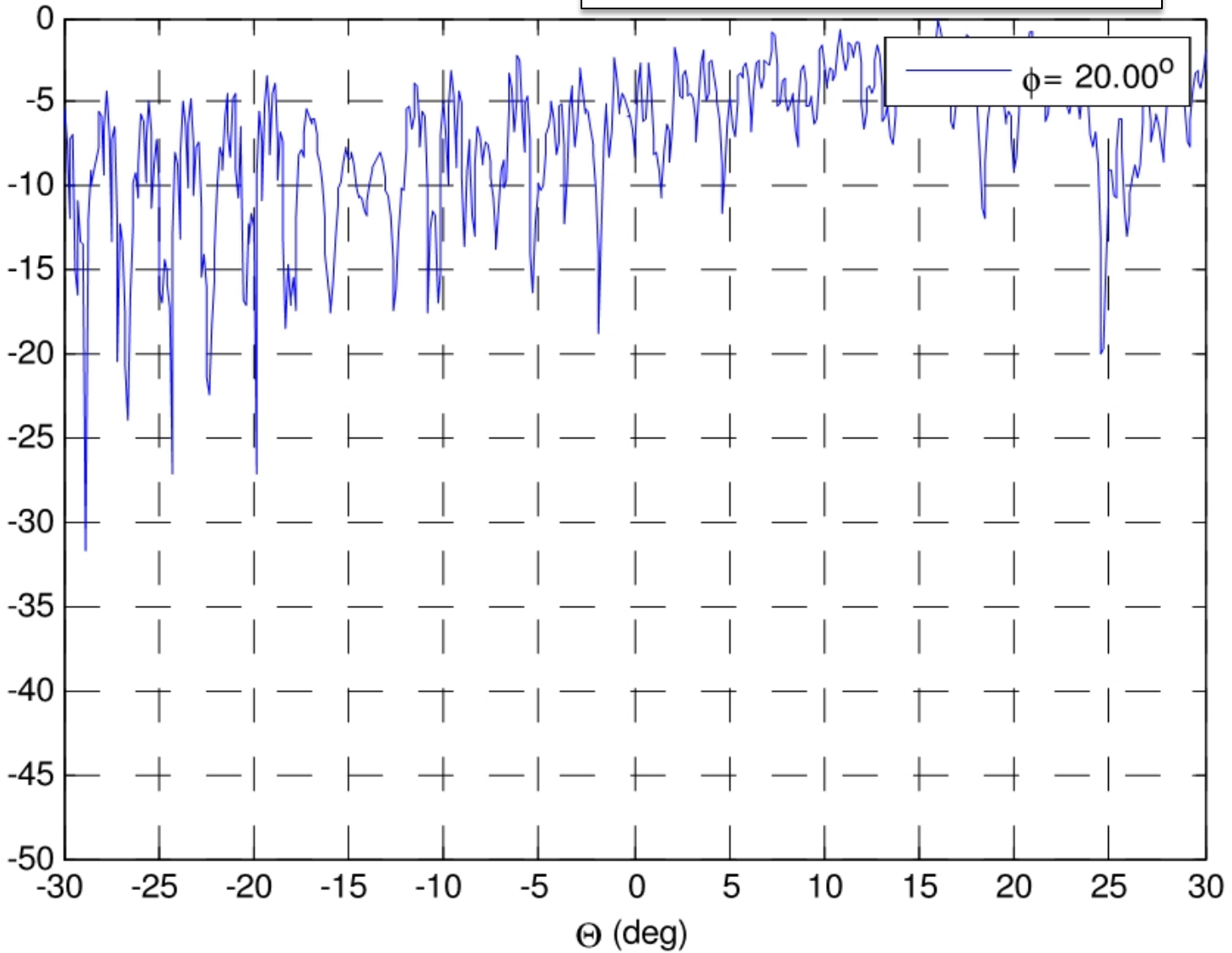


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.6 dBi

Off-axis Gain Below Peak (dBi)



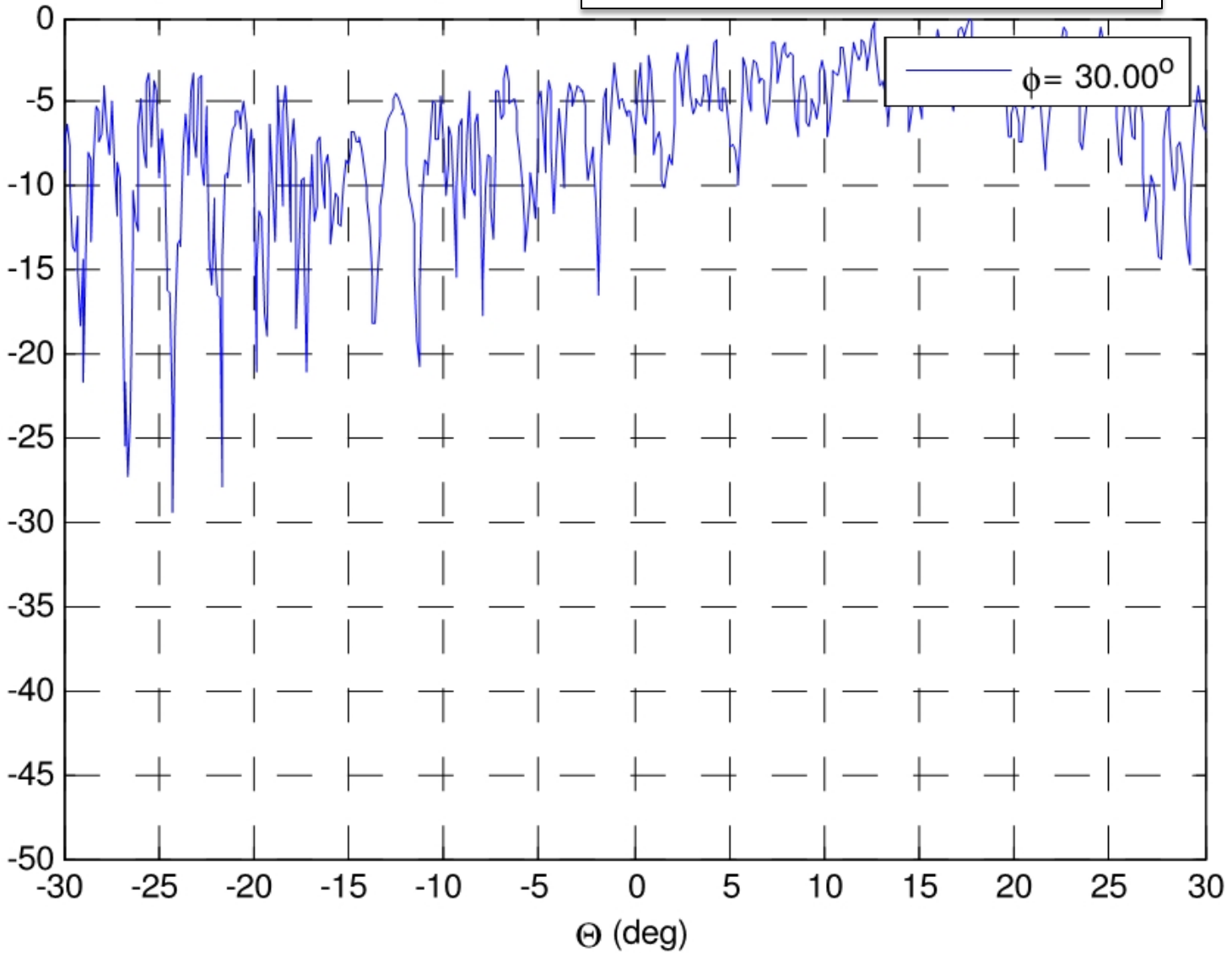


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -25.0 dBi

Off-axis Gain Below Peak (dBi)

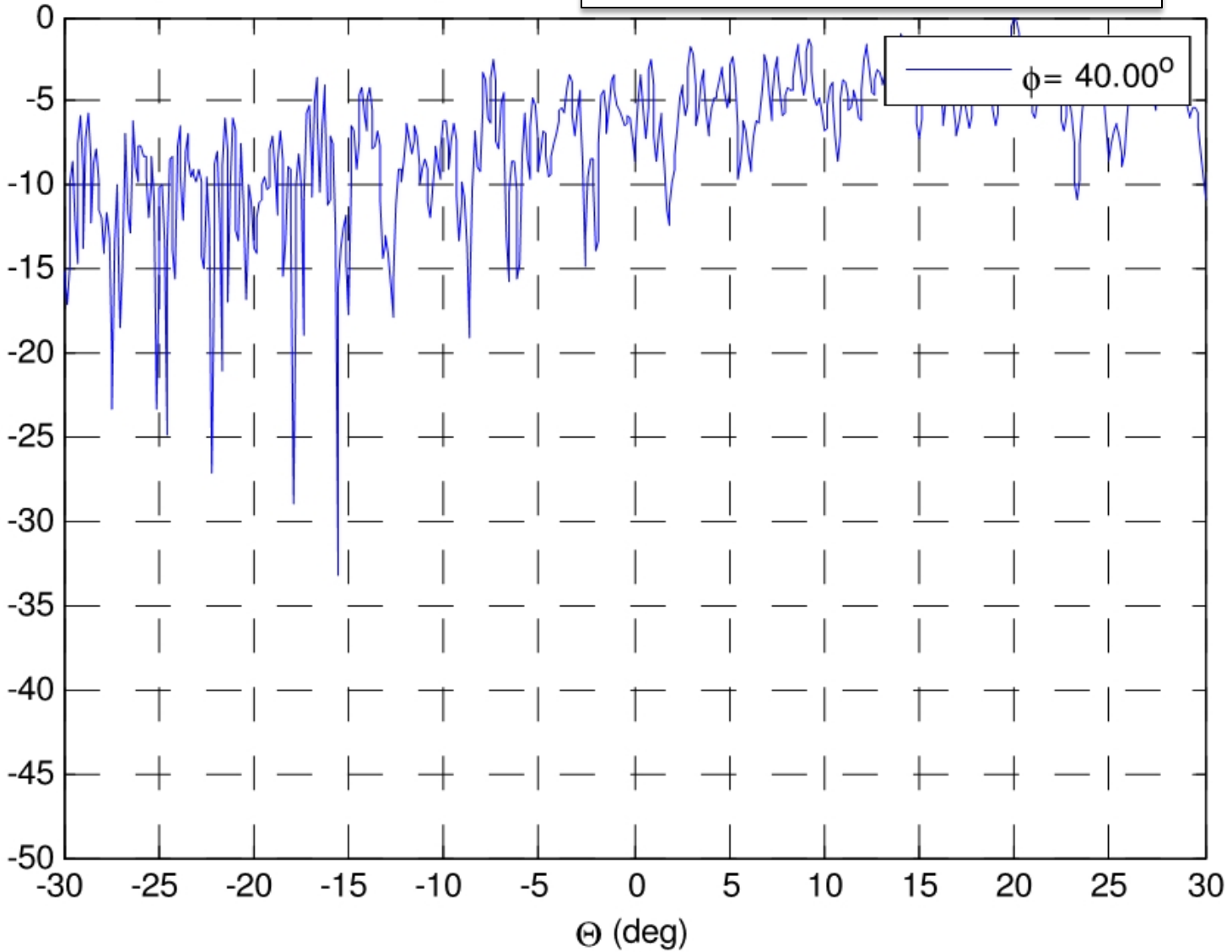


# Normalized pattern cuts - farfield

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

Peak Off-axis Gain = -24.5 dBi

Off-axis Gain Below Peak (dBi)

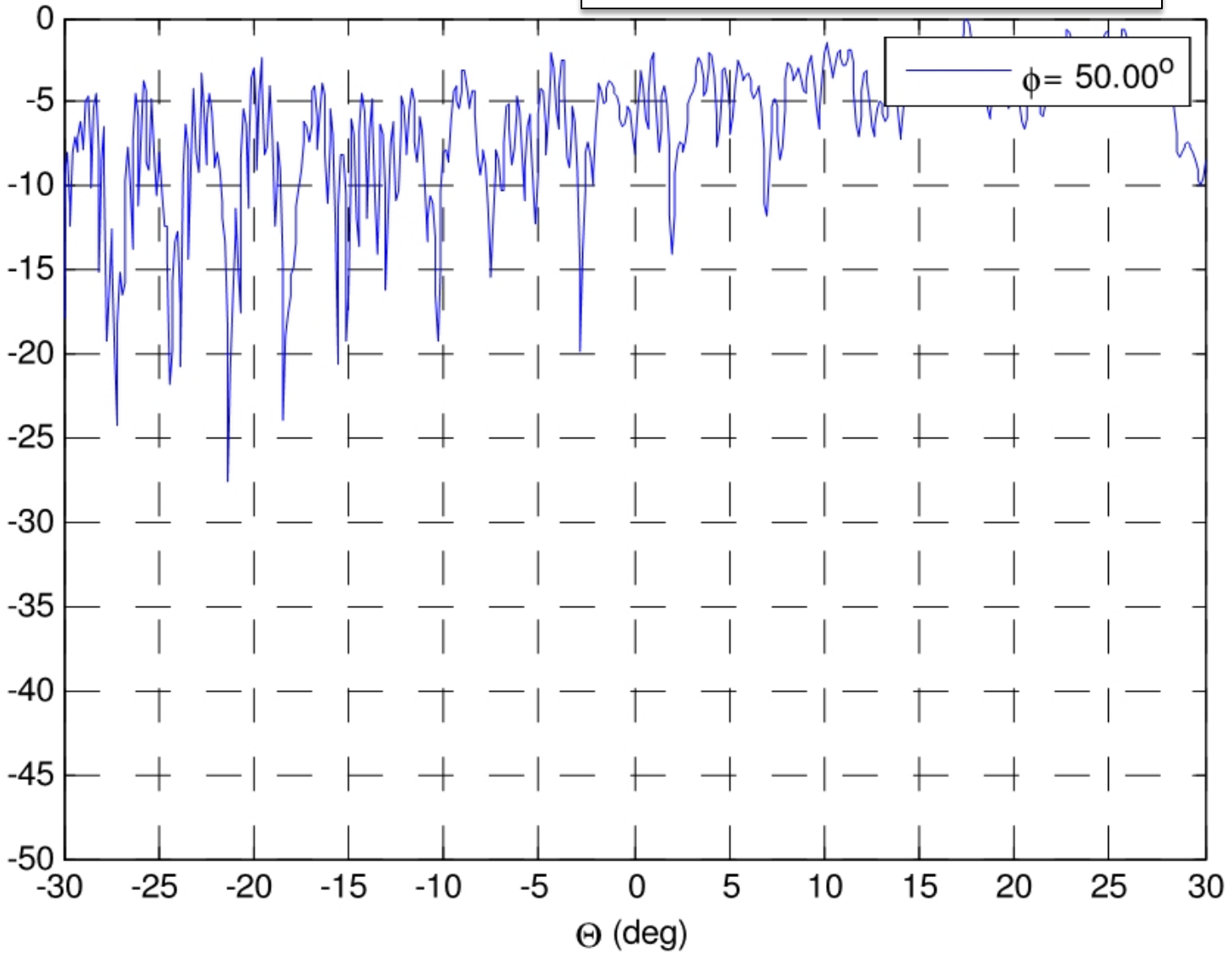


# Normalized pattern cuts - farfield

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)

