

# Definitions of angles in NORSAR-3D

Version 3.0.2

## Definition: Theta and Phi

A vector can be defined through two angles.

In NORSAR-3D the angles are following the standard definitions of spherical coordinates.

**theta ( $\theta$ ):**

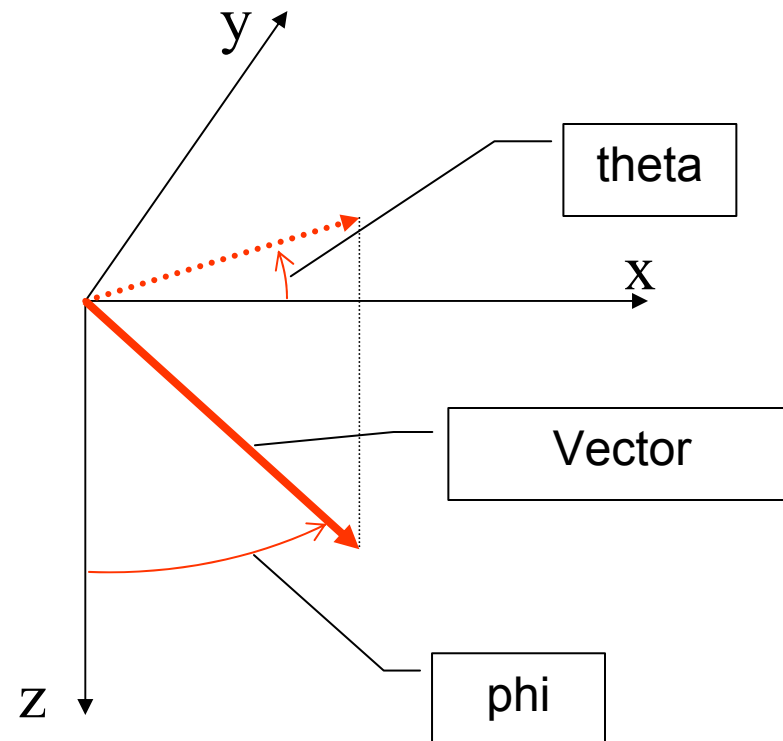
*Counterclockwise rotation from local (model) x-axis to the projection of the vector into the local xy plane.*

*Range: [-180, 180]*

**phi ( $\phi$ ):**

*Angle from (the downgoing) z-axis to the vector.*

*Range [0, 180]*



# Theta, Phi and radius in "Trace Wavefront" window

Trace Wavefront

Trace

Write Messages During Tracing  
Set Technical Parameters...

Maximum Travelttime (sec)

Shot Selection (Number Selected: 1)

	Start	Stop	Incr.	Number
I-Direction	1	110	1	110
J-Direction	1	80	1	80
K-Direction	1	1	1	1
I-Select	<input type="text" value="55"/>	<input type="text" value="55"/>	<input type="text" value="1"/>	<input type="text" value="1"/>
J-Select	<input type="text" value="40"/>	<input type="text" value="40"/>	<input type="text" value="1"/>	<input type="text" value="1"/>
K-Select	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="1"/>

Shot Type  Spherical  Disc

Disc Par. (deg)	Theta	Phi	Radius
<input type="text" value="0.000"/>	<input type="text" value="0.000"/>	<input type="text" value="0.000"/>	<input type="text" value="60.000"/>

Shot Similarity  No Shot Similarity

Max. Distance Between Full Shots (km)

Event Disc Radius In MidShots (deg)

Travelttime Extrapol. In MidShots (sec)

Store 3D Events

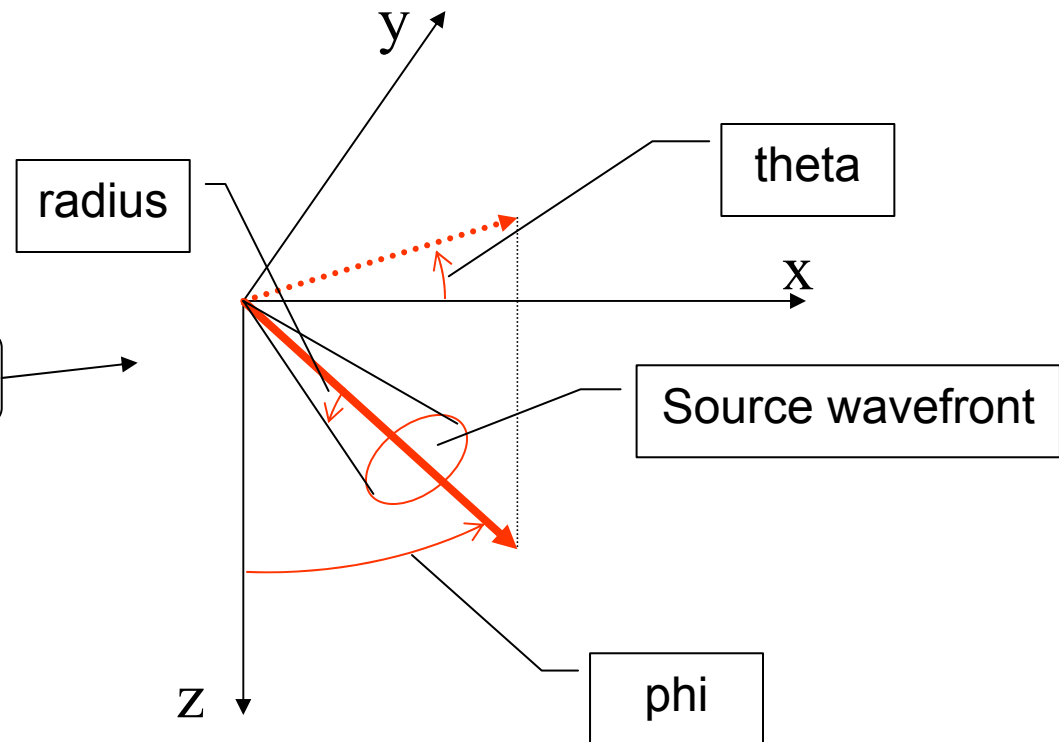
3D EVENT SET SHOTS FOR SELECTED EVENT SET

Event	I-Dir.	J-Dir.	K-Dir.	Start	Stop	Incr.
Eraf_test						
Eraf_test2						
Eraf_test3						

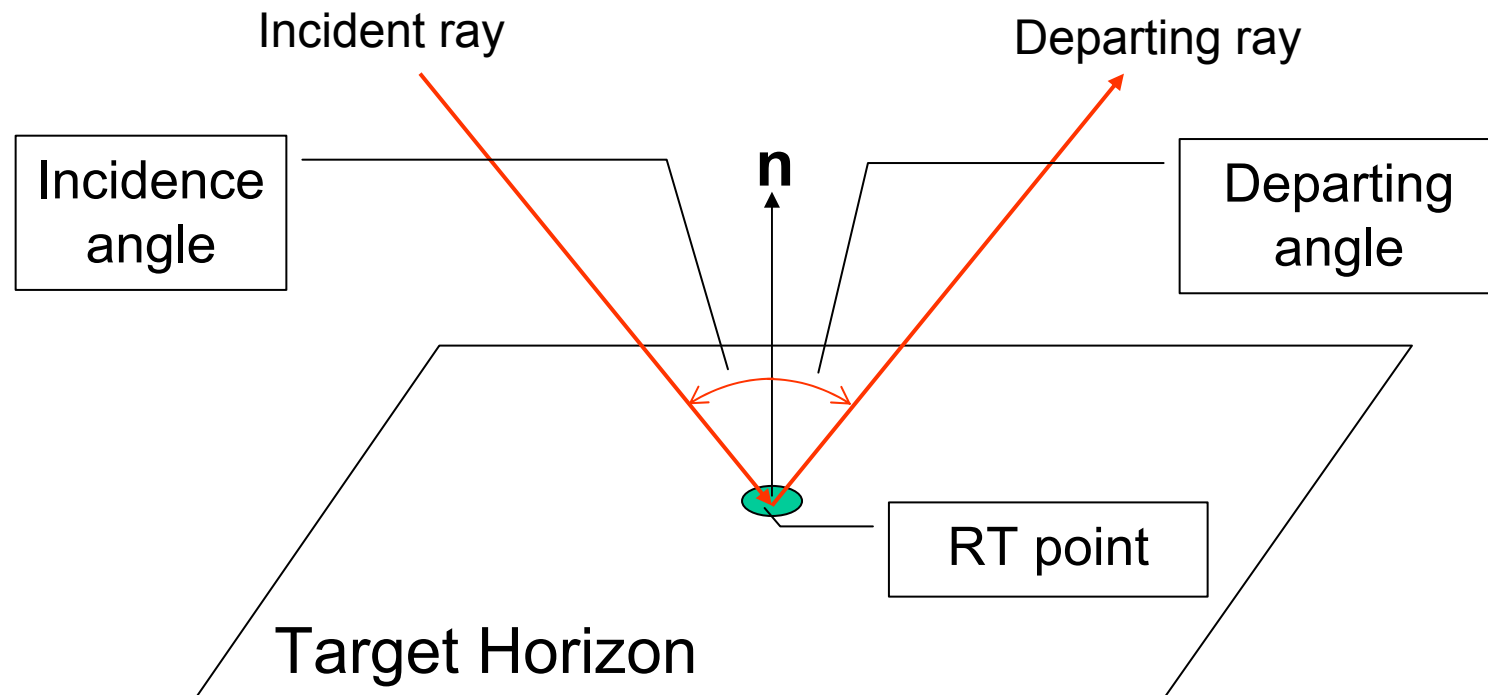
Output Set

Set Wave Front Plot Options...

Close Filter Help



## Incidence and departing angle



## Definition: Azimuth and Dip

A vector can be defined through two angles.

In some applications in NORSAR (Illumination Mapper) the angles *azimuth* and *dip* are used.

**azimuth:**

*Clockwise rotation from UTM y-axis (North) to the projection of the vector into the UTM xy plane.*  
*Range: [-180, 180]*

**dip:**

*Angle from the UTM xy-plane to the vector.*  
*Range [0, 180]*

