

AIRSAR Single Look Complex Data

The AIRSAR group at JPL has agreed to provide on a limited scale the AIRSAR single look complex (SLC) data. The characteristics of these data are described below.

1. Polarimetry Data

POLSAR data will contain four SLC files for each frequency collected:

<i>File Name</i>	<i>Description</i>
cm*_c/l/p.hh	c/l/p horizontally transmitted and horizontally received
cm*_c/l/p.hv	c/l/p horizontally transmitted and vertically received
cm*_c/l/p.vh	c/l/p vertically transmitted and horizontally received
cm*_c/l/p.vv	c/l/p vertically transmitted and vertically received

The data file for each of these polarizations for a 10 km along track segment of data is approximately 430 Mbytes. These files and file sizes also apply to polarimetric data collected in a TOPSAR mode.

2. TOPSAR Data

TOPSAR data are collected in ping-pong or non ping-pong mode (single or double baseline respectively).

Non ping-pong TOPSAR data will contain two SLC files for the following channels:

<i>File Name</i>	<i>Description</i>
ts*_c.bt	vv data transmitted and received on the bottom antenna
ts*_c.tp	vv data transmitted and received on the top antenna
ts*_l.bt	vv data transmitted and received on the bottom antenna
ts*_l.tp	vv data transmitted and received on the top antenna

Ping-pong TOPSAR data will contain four SLC files for the following channels:

<i>File Name</i>	<i>Description</i>
ts*_c.BB	vv data transmitted and received on the bottom antenna
ts*_c.BT	vv data transmitted from the bottom antenna and received on the top antenna
ts*_c.TB	vv data transmitted from the top antenna and received on the bottom antenna
ts*_c.TT	vv data transmitted and received on the top antenna
ts*_l.BB	vv data transmitted and received on the bottom antenna
ts*_l.BT	vv data transmitted from the bottom antenna and received on the top antenna
ts*_l.TB	vv data transmitted from the top antenna and received on the bottom antenna
ts*_l.TT	vv data transmitted and received on the top antenna

Each of these files is approximately 468 Mbytes for a 10 km along track segment.

3. POLTOP Data

POLTOP data, when available, will contain eight SLC files for the C-band data (the only frequency currently available as POLTOP):

<i>File Name</i>	<i>Description</i>
ts*.hh_L	H transmitted and H received on the lower C-band antenna
ts*.hv_L	H transmitted and V received on the lower C-band antenna
ts*.vh_L	V transmitted and H received on the lower C-band antenna
ts*.vv_L	V transmitted and V received on the lower C-band antenna

ts*.hh_U H transmitted and H received on the upper C-band antenna
ts*.hv_U H transmitted and V received on the upper C-band antenna
ts*.vh_U V transmitted and H received on the upper C-band antenna
ts*.vv_U V transmitted and V received on the upper C-band antenna

Each of these files is approximately 450 Mbytes for a 10 km along track segment.

4. Product Length and Output Media

Due to the large file size, SLC data are available for 10 km (42,000 frame counts) along track segments only and are distributed on 8 mm exabyte tape. The files are written to tape using Unix TAR commands.

5. Header Information

SLC data will contain the standard AIRSAR new header and parameter header at the beginning of the data file (see Data Format document on our web site <http://airsar.jpl.nasa.gov>) for the definition of these headers. The calibration and DEM headers are not applicable and are not included.

6. SLC Data Format

The format of all SLC files is 8-byte complex (c8).

7. SLC Calibration Status

SLC data are generated before calibration is applied to the data and are not radiometrically or phase calibrated.

8. Uses of SLC Data

AIRSAR SLC data are not suitable for:

- repeat pass interferometry (since the data are not processed to a common reference)
- generating DEM data (since the data are not phase calibrated)
- quantitative studies where calibrated data are needed

AIRSAR SLC data may be suitable for:

- image analysis
- development of phase unwrapping algorithms
- development of data compression techniques and calibration techniques