Reflection seismic study of the Siljan Ring impact structure: Orsa - Migrated data

SND-ID: snd1042-4. **Version**: 1.0. **DOI**: https://doi.org/10.5878/002987

Download data

SND 1042-004-V1.0.zip *(9.13 MB)*

Associated documentation

SND 1042 - orsa_2011_stack.jpg *(1.7 MB)*

SND 1042 - Orsa_line.geojson *(357 bytes)*

SND 1042 - Orsa_line.gml *(755 bytes)*

Download all files

snd1042-4-1.0.zip *(~10.83 MB)*

Citation

Juhlin, C., Sturkell, E., Ebbestad, J. O. R., Lehnert, O., Högström, A. E. S., & Meinhold, G. (2018) Reflection seismic study of the Siljan Ring impact structure: Orsa - Migrated data (Version 1.0) [Data set]. Uppsala University. Available at: https://doi.org/10.5878/002987

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Description

Two new reflection seismic profiles over the Paleozoic successions of the western part of the Siljan Ring impact structure were acquired during 2011, the Mora and the Orsa profile. This data set concerns the Orsa profile. The profile has length of c. 12 km and the processed data image the geological section to about 3 km depth (Silurian siliciclastic and Ordovician carbonate rocks to serveral hundred metres depth, below disturbed Paleoproterozoic crystalline basement). During the survey, 542 source points (VIBSIST 3000) were recorded by 320 receiver channels for 30 seconds. From this recording, the following data sets were generated and are published here: 1) decoded and quality controlled raw data; 2) pre-processed (shot geometry applied) data; 3) stacked data; 4) migrated data; 5) depth converted data and velocity field.
Key acquisition parameters are:
Number of channels: 320 (160–160)
Near offset: 0m

Geophone spacing: 10 m
Geophone type: 28 Hz single
Source spacing: 20 m
Source type: VIBSIST 3000
Hit interval between hammer blows: 100–200 ms
Sweeps per source point: 3–4
Nominal fold: 80
Recording instrument: SERCEL 428UL
Sample rate: 1 ms
Field low cut: Out
Field high cut: 400 Hz
Record length: 30 s
Profile length: 12 km
Source points: 542
Dates acquired: 10/6–15/6: 2011

This dataset contains processed data of the Orsa profile.
Processing steps for this data set:
1: Read decoded VIBSIST data
2: Bulk static shift to zero time
3: Apply geometry
4: Pick first breaks
5: Spherical divergence correction
6: Trace editing
7: Trace balance: 0–3000 ms
8: Spectral equalization: 0–600 ms: 50–80–200–240 Hz; 700–1500 ms: 40–70–180–240 Hz
9: Time variant bandpass filter: 0–400 ms: 50–80–240–360 Hz; 450–600 ms: 45–70–210–300 Hz; 700–1000 ms: 40–60–180–270 Hz; 1100–3000 ms: 35–50–150–225 Hz
10: Refraction statics: datum 180 m, replacement velocity 3000 m/s
11: Residual statics
12: Median filter: 11 traces, 3 samples, 1600, 2000, 2400 m/s, subtract
13: AGC: 50 ms
14: No mute
15: Residual statics
16: Velocity analysis
17: NMO correction: 70% stretch mute
18: Trace balance
19: FX Decon: 19 trace window
20: Dip filter 1.5 ms/trace cutoff
21: Trace balance
22: Stolt migration: 200–3000, 1000–4000 ms/s

Processed seismic data stored as one file for the enitre seismic profile, according to SEG technical standard SEG-Y revision 1 (SEG-Y_r1.0, 2002); https://seg.org/Publications/SEG-Technical-Standards

Data contains personal data

No

Language

English

Time period(s) investigated

2011-06-10 – 2011-06-15

Data format / data structure

Numeric

Text

Geospatial

Other

Data collection 1

- Time period(s) for data collection: 2011-06-10 – 2011-06-15
- Instrument: VIBSIST 3000 - Seismic
- Instrument: SERCEL 428UL - Seismic

Geographic spread

Geographic location: Orsa Municipality

Geographic description: Siljan Ring impact structure, central Sweden, near Orsa

Responsible department/unit

Department of Earth Sciences

Funding

- Funding agency: Swedish Research Council
- Funding agency's reference number: 2009-04492

Research area

Geophysics (Standard för svensk indelning av forskningsämnen 2011)

Geoscientific information (INSPIRE topic categories)

Keywords

Earth science, Geological disaster, Geophysics, Research

Publications

Juhlin, Christopher, Erik Sturkell, Jan Ove R. Ebbestad, Oliver Lehnert, Anette E. S. Högström, and Guido Meinhold. 2012. “A New Interpretation of the Sedimentary Cover in the Western Siljan Ring Area, Central Sweden, Based on Seismic Data.” Tectonophysics 580 (December):88-99. https://doi.org/10.1016/j.tecto.2012.08.040.
Fulltext article
DOI: https://doi.org/10.1016/j.tecto.2012.08.040

If you have published anything based on these data, please notify us with a reference to your publication(s). If you are responsible for the catalogue entry, you can update the metadata/data description in DORIS.

Polygon (Lon/Lat)

14.60869974, 61.20358864
14.60869974, 61.12874931
14.73675842, 61.12874931
14.73675842, 61.20358864
14.60869974, 61.20358864

Accessibility level

Access to data through SND
Data are freely accessible

Use of data

Things to consider when using data shared through SND

License

CC BY-SA 4.0

Versions

Version 1.0. 2018-02-27

Contact for questions about the data

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Related research data in SND's catalogue

Reflection seismic study of the Siljan Ring impact structure: Orsa - Raw data
Reflection seismic study of the Siljan Ring impact structure: Orsa - Shot geometry corrected
Reflection seismic study of the Siljan Ring impact structure: Orsa - Stacked data
Reflection seismic study of the Siljan Ring impact structure: Orsa - Time-depth migrated data
Reflection seismic study of the Siljan Ring impact structure: Mora - Raw data
Reflection seismic study of the Siljan Ring impact structure: Mora - Shot geometry corrected
Reflection seismic study of the Siljan Ring impact structure: Mora - Stacked data
Reflection seismic study of the Siljan Ring impact structure: Mora - Migrated data
Reflection seismic study of the Siljan Ring impact structure: Mora - Time-depth migrated data

Download metadata

DataCite
DDI 2.5
DDI 3.3
DCAT-AP-SE 2.0
JSON-LD
PDF
Citation (CLS)

File overview (CSV)

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