*Source data*

Patterns of seismic cycle in the Kuril Island arc from GPS observations

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Table 1.

Velocities of horizontal displacements of KurilNet stations estimated over 1-year intervals: within interval from 2006.5 to 2015.5 calculated in ITRF2008 reference frame relative to North American plate

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Station | PARM | KHAM | MATC | KETC | URUP | VDLN | ITUR | KUNA | SHIK |
| Latitude, N Longitude, E | 50.67  156.12 | 49.16  154.45 | 48.04  153.23 | 47.30  152.49 | 46.23  150.57 | 45.58  149.40 | 45.23  147.87 | 44.04  145.86 | 43.87  146.83 |
| Velocity  Period | VN (mm/yr)±σN (mm/yr)  VE (mm/yr)±σE (mm/yr) | | | | | | | | |
| 2006.5–2007.5 | 0.37±2.51  -22.98±2.27 | — | — | — | — | 9.72±2.40  -13.62±1.8 | 13.96±2.44  -16.68±2.03 | 20.23±2.05  -24.36±2.04 | 18.79±2.57  -35.66±2.05 |
| 2007.5–2008.5 | 11.66±0.57  -12.41±1.17 | — | -48.16±3.19  63.06±3.18 | -49.25±3.19  85.95±3.19 | 1.88±3.72  21.12±3.81 | — | 12.79±0.81  -2.99±0.87 | 18.19±1.27  -15.07±1.15 | 19.23±1.05  -26.10±1.06 |
| 2008.5–2009.5 | 16.10±1.34  -10.85±1.17 | -9.01±1.13  12.27±0.81 | -36.38±1.06  51.80±0.69 | -29.50±0.93  67.68±1.29 | 3.73±2.09  12.46±2.16 | — | 5.04±1.13  -4.05±0.88 | 15.81±0.81  -18.14±0.81 | 19.65±0.70  -27.90±0.73 |
| 2009.5–2010.5 | 12.09±1.16  -14.64±1.29 | -5.65±1.08  5.27±0.93 | -14.66±1.14  26.90±0.88 | -15.50±1.01  35.43±0.98 | — | — | 15.70±0.90  -28.50±0.93 | 12.22±0.79  -16.05±0.81 | 18.23±0.83  -30.48±0.76 |
| 2010.5–2011.5 | 8.45±0.74  -18.12±0.98 | -4.48±1.11  3.25±0.92 | -10.52±1.17  17.07±0.73 | -9.08±0.91  24.10±1.04 | 9.64±1.98  -2.83±1.74 | — | 11.93±0.87  -9.95±0.88 | 20.59±0.69  -22.86±0.74 | 19.54±0.80  -31.46±0.77 |
| 2011.5–2012.5 | 8.69±1.09  -11.11±1.16 | -7.01±1.06  9.37±1.02 | -7.50±0.93  17.39±0.75 | -5.86±1.04  19.67±1.02 | 11.52±1.93  -3.53±1.84 | — | 12.74±0.91  -7.41±0.90 | 20.94±0.74  -15.63±0.91 | 22.14±0.88  -25.93±0.73 |
| 2012.5–2013.5 | 7.24±0.75  -14.70±0.81 | -5.73±0.98  10.99±0.99 | -6.55±0.76  11.99±1.13 | -4.44±0.84  11.45±0.92 | 5.65±1.44  -8.24±1.63 | — | 14.86±0.79  -6.17±0.82 | 20.45±0.71  -16.80±0.63 | 21.82±0.88  -26.83±0.84 |
| 2013.5–2014.5 | 7.87±0.82  -17.63±0.92 | -2.18±0.85  7.45±0.83 | -5.32±0.99  4.64±0.76 | -2.33±0.82  4.14±0.87 | 7.16±1.02  -14.33±1.34 | — | — | — | — |
| 2014.5–2015.5 | 11.85±0.76  -14.09±0.88 | -2.81±0.87  2.85±0.90 | -2.46±0.81  9.53±0.82 | -0.98±0.84  9.54±0.95 | 11.58±1.28  -8.12±1.17 | — | — | — | — |

Table 2.

Horizontal coseismic displacements of the Earth’s surface recorded by the stations of KurilNet and other networks during the First Simushir earthquake 11/15/2006 (calculated in ITRF2008 reference frame relative to North American plate)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| GPS-station | Station coordinates | | North Offset  UN (mm)±σN (mm) | East Offset  UE (mm)±σE (mm) |
| Latitude, N | Longitude, E |
| PETS | 53.02 | 158.65 | 8.37±0.54 | 5.06±0.45 |
| PARM | 50.67 | 156.12 | 7.48±1.08 | 2.58±0.85 |
| MATC | 48.04 | 153.23 | -250.20±0.27 | 246.80±49.40 |
| KETC | 47.30 | 152.49 | -201.30±40.30 | 362.80±72.60 |
| URUP | 46.23 | 150.57 | 2.72±1.08 | 88.12±0.87 |
| VDLN | 45.58 | 149.40 | 3.20±1.80 | 22.10±4.90 |
| ITUR | 45.23 | 147.87 | 2.35±0.71 | 88.12±0.56 |
| KUNA | 44.04 | 145.86 | 1.64±0.77 | 7.01±0.63 |
| SHIK | 43.87 | 146.83 | 1.43±0.67 | 7.57±0.55 |
| YSSK | 47.03 | 142.72 | 9.38±0.51 | 1.84±0.41 |

Table 3.

Horizontal coseismic displacements of the Earth’s surface recorded by the stations of KurilNet and other networks during the Second Simushir earthquake 13/01/2007 (calculated in ITRF2008 reference frame relative to North American plate)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| GPS-station | Station coordinates | | North Offset  UN (mm)±σN (mm) | East Offset  UE (mm)±σE (mm) |
| Latitude, N | Longitude, E |
| PETS | 53.02 | 158.65 | 3.44±1.48 | 1.59±1.30 |
| PARM | 50.67 | 156.12 | 14.25±0.77 | -1.94±0.83 |
| URUP | 46.23 | 150.57 | 8.55±1.23 | -3.16±1.01 |
| ITUR | 45.23 | 147.87 | 2.83±0.91 | 3.01±1.07 |
| KUNA | 44.04 | 145.86 | 2.82±1.04 | 3.33±1.19 |
| SHIK | 43.87 | 146.83 | 2.69±1.15 | 3.25±1.25 |
| YSSK | 47.03 | 142.72 | 0.99±0.41 | 0.36±0.47 |

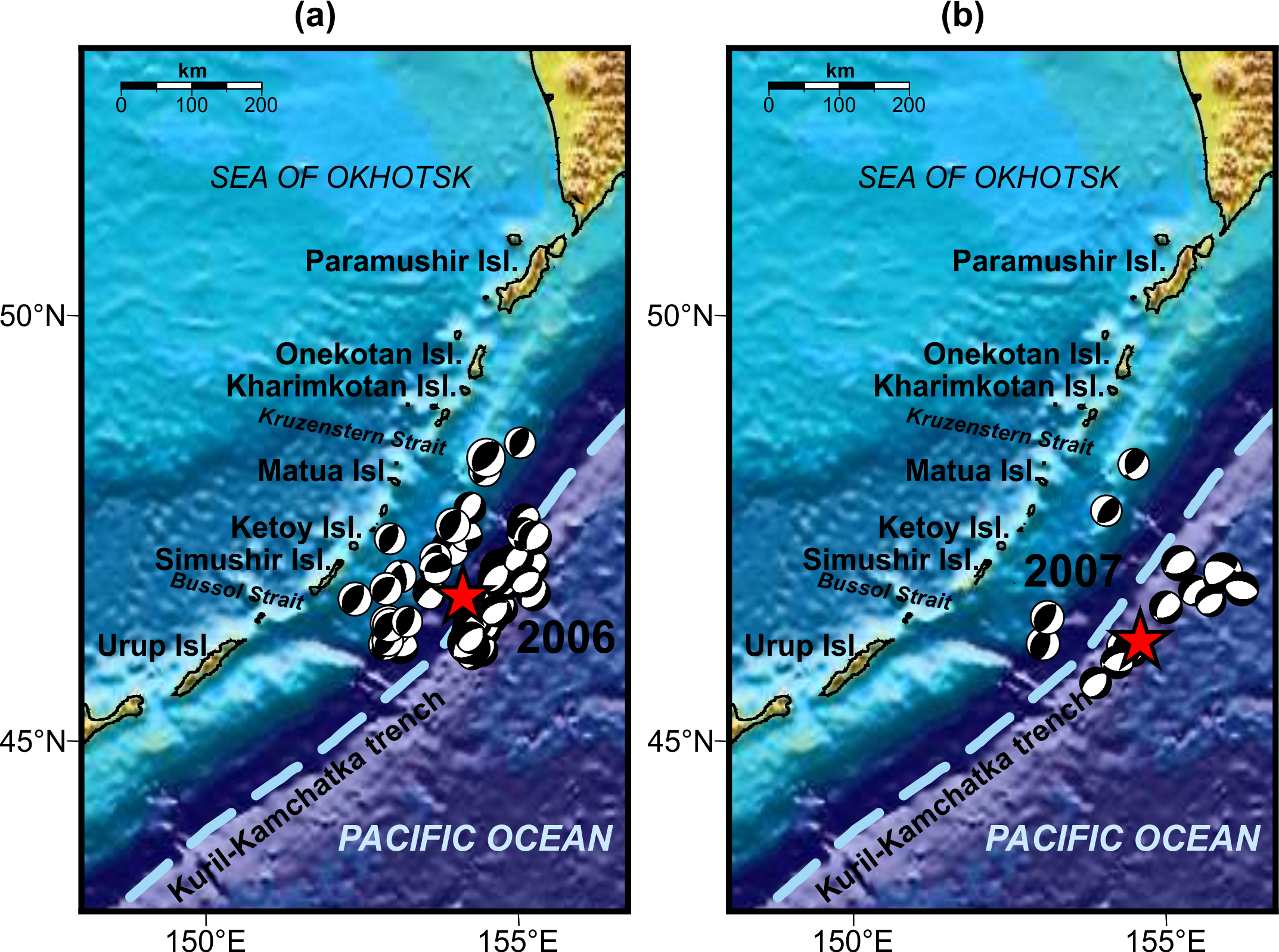


Fig 1. Spatial distribution and focal mechanisms of aftershocks of the 2006 (a) and 2007 (b) Simushir with M≥5, recorded within first two months after each of these seismic events (based on GCMT catalogue). Red stars denotes the main shocks of the 2006 and 2007 Simushir earthquakes/

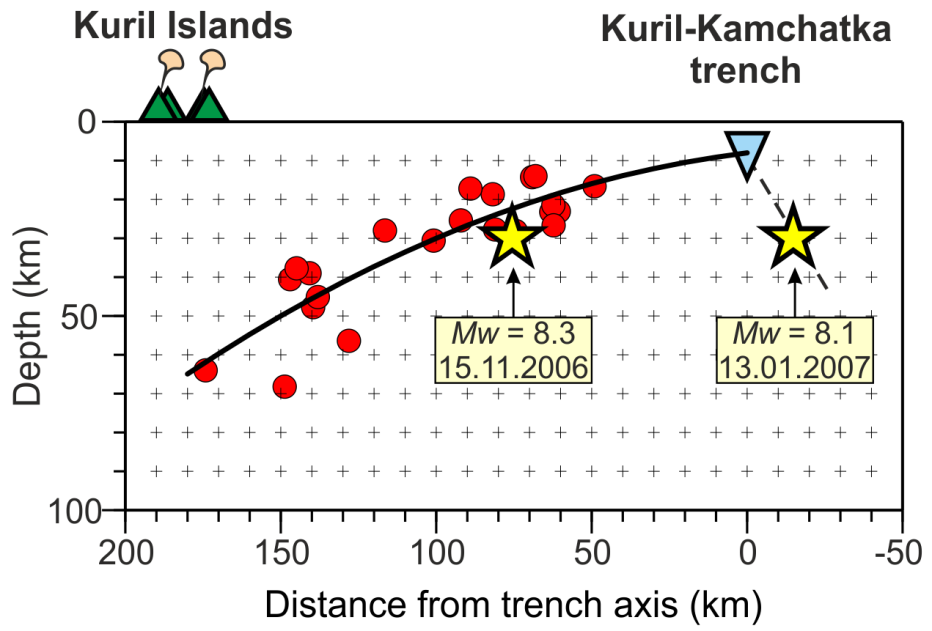


Fig 2. Cross section of the upper 100 km of the central part of the Kuril subduction zone. Red circles denotes hypocenters of thrust events since 1976. The solid curve is the second-order polynomial regression model. The dashed black line denotes the fault plane of the 2007 Simushir earthquake.

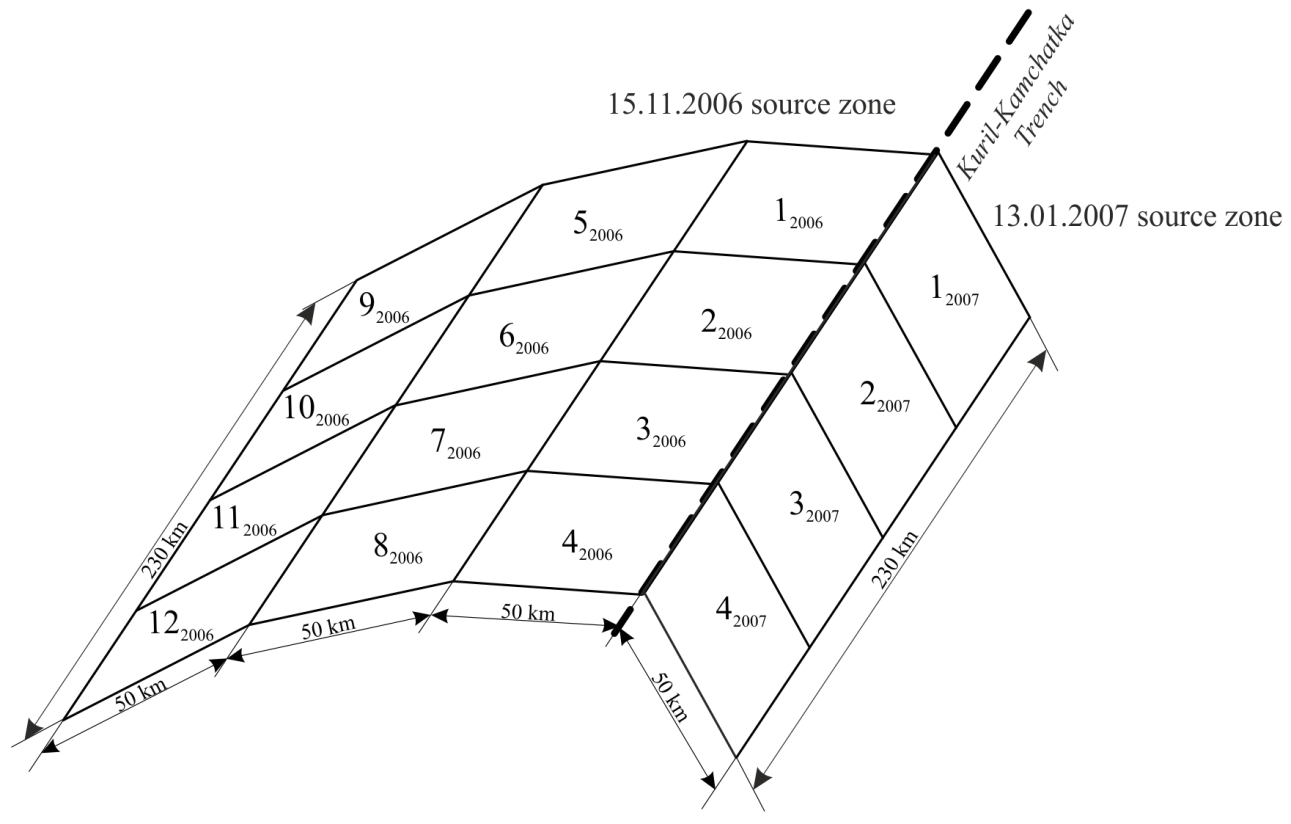


Fig 3. Approximation scheme of the 2006 and 2007 earthquakes source zones by a set of disjoint rectangular finite elements

Table 4.

Parameters of the source model of the First Simushir earthquake on November 15, 2006 (numbers of finite elements are given according to Fig. 1). “Lat, N” and “Lon, E” are coordinates of center of corresponding rectangular element.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Element number | Lower side  depth (km) | Upper side  depth (km) | Azimuth  (deg) | Dip (deg.) | Lat, N | Lon, E | Rake (deg.) | Slip (m) |
| 12006 | 7.92 | 0.00 | 221.1 | 9.0 | 47.46 | 154.82 | 107.51 | 2.60 |
| 22006 | 7.92 | 0.00 | 221.1 | 9.0 | 47.07 | 154.32 | 136.65 | 3.41 |
| 32006 | 7.92 | 0.00 | 221.1 | 9.0 | 46.68 | 153.82 | 116.92 | 5.28 |
| 42006 | 7.92 | 0.00 | 221.1 | 9.0 | 46.29 | 153.32 | 140.00 | 11.06 |
| 52006 | 22.26 | 7.92 | 221.1 | 16.0 | 47.75 | 154.32 | 100.00 | 3.04 |
| 62006 | 22.26 | 7.92 | 221.1 | 16.0 | 47.36 | 153.82 | 100.00 | 4.09 |
| 72006 | 22.26 | 7.92 | 221.1 | 16.0 | 46.97 | 153.33 | 100.00 | 4.06 |
| 82006 | 22.26 | 7.92 | 221.1 | 16.0 | 46.58 | 152.83 | 137.39 | 11.94 |
| 92006 | 42.46 | 22.26 | 221.1 | 22.0 | 48.03 | 153.86 | 96.61 | 1.68 |
| 102006 | 42.46 | 22.26 | 221.1 | 22.0 | 47.66 | 153.33 | 100.00 | 1.57 |
| 112006 | 42.46 | 22.26 | 221.1 | 22.0 | 47.25 | 152.85 | 103.85 | 1.88 |
| 122006 | 42.46 | 22.26 | 221.1 | 22.0 | 46.86 | 152.35 | 120.00 | 2.94 |

Table 5.

Parameters of the source model of the Second Simushir earthquake on January 13, 2007 (numbers of finite elements are given according to Fig. 1). “Lat, N” and “Lon, E” are coordinates of center of corresponding rectangular element.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Element number | Lower side  depth (km) | Upper side  depth (km) | Azimuth  (deg) | Dip (deg.) | Lat, N | Lon, E | Rake (deg.) | Slip (m) |
| 12007 | 42.86 | 0.00 | 39.9 | 59.0 | 47.31 | 155.63 | 7.63 | 1.83 |
| 22007 | 42.86 | 0.00 | 39.9 | 59.0 | 46.91 | 155.14 | 33.46 | 1.88 |
| 32007 | 42.86 | 0.00 | 39.9 | 59.0 | 46.51 | 154.66 | 54.85 | 3.38 |
| 42007 | 42.86 | 0.00 | 39.9 | 59.0 | 46.11 | 154.18 | 69.25 | 6.42 |

Table 6.

Horizontal postseismic displacements of the Earth’s surface recorded by the stations of KurilNet during the first two months after the First Simushir earthquake 11/15/2006 (calculated in ITRF2008 reference frame relative to North American plate). Two-weeks-sampling displacements are given

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Station | PARM | URUP | ITUR | KUNA | SHIK |
| Latitude, N Longitude, E | 50.67  156.12 | 46.23  150.57 | 45.23  147.87 | 44.04  145.86 | 43.87  146.83 |
| Displacement  Period | UN (mm)±σN (mm)  UE (mm)±σE (mm) | | | | |
| 16/11/2006–30/11/2006 | 0.56±0.92  -2.32±0.83 | -1.60±0.86  25.90±0.73 | -0.80±0.95  3.75±0.80 | 2.04±0.97  -2.68±0.79 | 2.10±0.77  -3.17±0.66 |
| 01/12/2006–15/12/2006 | 2.52±0.74  -2.42±0.82 | -1.56±0.83  9.86±0.81 | -0.96±0.88  1.30±0.77 | 1.82±0.92  -1.95±1.07 | 2.08±0.88  -2.04±0.84 |
| 16/12/2006–30/12/2006 | 2.18±0.83  2.54±0.85 | -1.43±0.78  5.56±0.76 | 0.95±0.73  2.20±0.79 | 1.60±0.82  -1.71±0.78 | 2.20±0.74  1.27±0.72 |
| 31/12/2006–12/01/2007 | 2.67±0.79  -1.61±0.75 | 1.38±0.80  4.59±0.86 | 0.22±0.71  -1.62±0.72 | 2.50±0.83  -2.44±0.79 | 2.92±0.82  -2.02±0.88 |

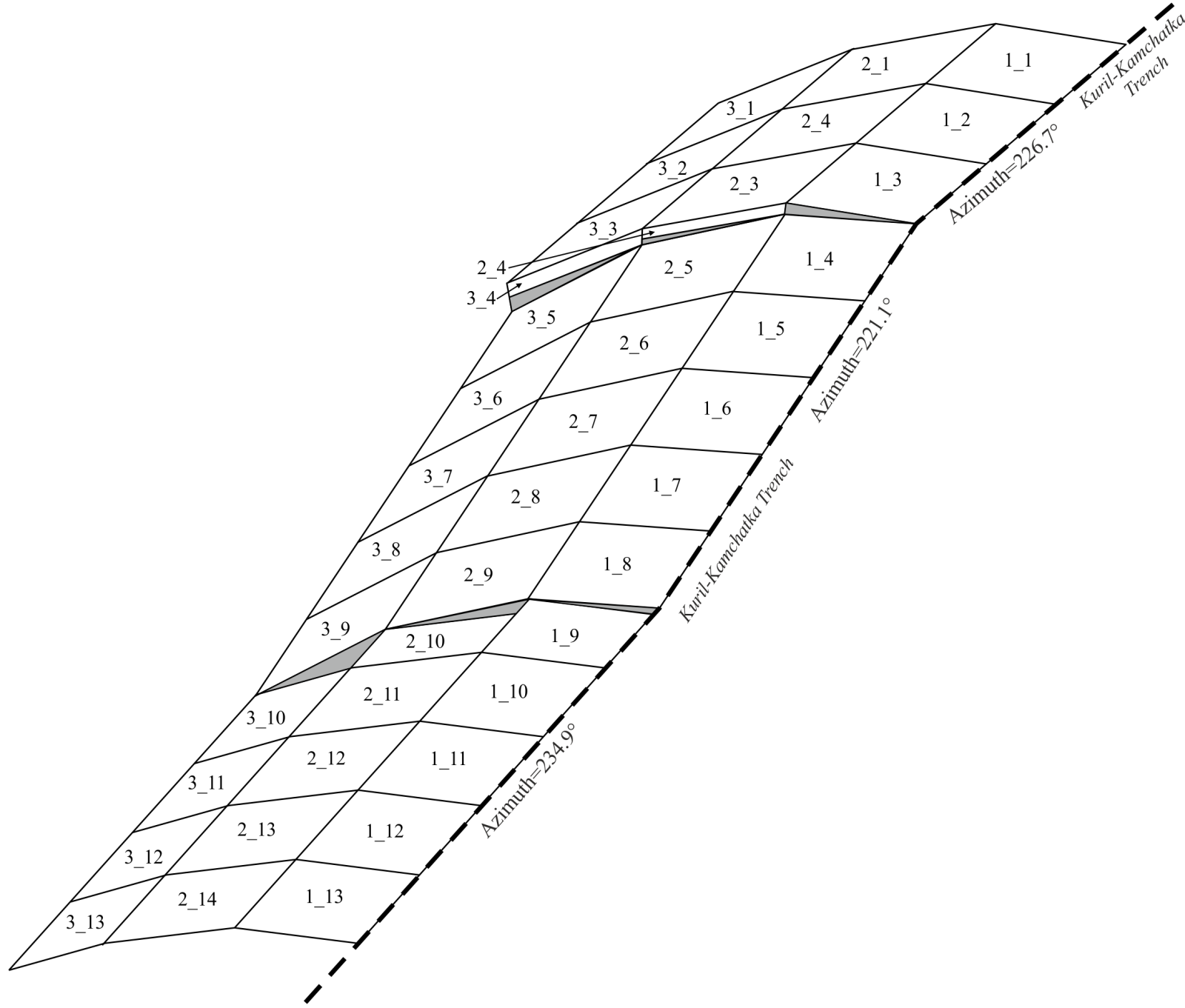
Fig 4. Approximation scheme of the extended source zone by a set of disjoint rectangular finite elements. In the areas indicated by gray triangles calculation of slip was not performed.

Table 7.

Parameters of the source models of the afterslip process in the first two months after the First Simushir earthquake on November 15, 2006 (numbers of finite elements are given according to Fig. 2). “Lat, N” and “Lon, E” are coordinates of center of corresponding rectangular element

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Time period: 16/11/2006–30/11/2006 | | | | | | | | |
| Element number | Lower side  depth (km) | Upper side  depth (km) | Azimuth  (deg) | Dip (deg.) | Lat, N | Lon, E | Rake (deg.) | Slip (m) |
| 1\_1 | 7.92 | 0.00 | 226.7 | 9.0 | 49.01 | 157.44 | 88.17 | 0.57 |
| 1\_2 | 7.92 | 0.00 | 226.7 | 9.0 | 48.66 | 156.87 | 75.56 | 0.66 |
| 1\_3 | 7.92 | 0.00 | 226.7 | 9.0 | 48.31 | 156.30 | 87.42 | 0.77 |
| 1\_4 | 7.92 | 0.00 | 221.1 | 9.0 | 47.91 | 155.78 | 101.12 | 0.08 |
| 1\_5 | 7.92 | 0.00 | 221.1 | 9.0 | 47.52 | 155.27 | 116.08 | 1.04 |
| 1\_6 | 7.92 | 0.00 | 221.1 | 9.0 | 47.13 | 154.77 | 110.45 | 1.15 |
| 1\_7 | 7.92 | 0.00 | 221.1 | 9.0 | 46.74 | 154.27 | 112.14 | 1.52 |
| 1\_8 | 7.92 | 0.00 | 221.1 | 9.0 | 46.35 | 153.78 | 98.67 | 1.88 |
| 1\_9 | 7.92 | 0.00 | 234.9 | 9.0 | 46.05 | 153.38 | 84.31 | 1.69 |
| 1\_10 | 7.92 | 0.00 | 234.9 | 9.0 | 45.83 | 152.95 | 82.47 | 0.74 |
| 1\_11 | 7.92 | 0.00 | 234.9 | 9.0 | 45.53 | 152.34 | 75.65 | 0.00 |
| 1\_12 | 7.92 | 0.00 | 234.9 | 9.0 | 45.23 | 151.74 | 78.33 | 0.00 |
| 1\_13 | 7.92 | 0.00 | 234.9 | 9.0 | 44.93 | 151.14 | 94.24 | 0.17 |
| 2\_1 | 22.26 | 7.92 | 226.7 | 16.0 | 49.32 | 157.00 | 81.62 | 0.21 |
| 2\_2 | 22.26 | 7.92 | 226.7 | 16.0 | 48.97 | 156.42 | 102.09 | 0.24 |
| 2\_3 | 22.26 | 7.92 | 226.7 | 16.0 | 48.62 | 155.85 | 114.18 | 0.28 |
| 2\_4 | 22.26 | 7.92 | 226.7 | 16.0 | 48.43 | 155.55 | 108.06 | 0.02 |
| 2\_5 | 22.26 | 7.92 | 221.1 | 16.0 | 48.19 | 155.33 | 109.28 | 0.36 |
| 2\_6 | 22.26 | 7.92 | 221.1 | 16.0 | 47.80 | 154.82 | 112.52 | 0.38 |
| 2\_7 | 22.26 | 7.92 | 221.1 | 16.0 | 47.41 | 154.32 | 112.98 | 0.37 |
| 2\_8 | 22.26 | 7.92 | 221.1 | 16.0 | 47.02 | 153.82 | 109.05 | 0.23 |
| 2\_9 | 22.26 | 7.92 | 221.1 | 16.0 | 46.63 | 153.32 | 90.00 | 0.00 |
| 2\_10 | 22.26 | 7.92 | 234.9 | 16.0 | 46.38 | 153.00 | 90.00 | 0.00 |
| 2\_11 | 22.26 | 7.92 | 234.9 | 16.0 | 46.18 | 152.60 | 90.00 | 0.00 |
| 2\_12 | 22.26 | 7.92 | 234.9 | 16.0 | 45.88 | 151.99 | 90.00 | 0.00 |
| 2\_13 | 22.26 | 7.92 | 234.9 | 16.0 | 45.58 | 151.38 | 90.00 | 0.00 |
| 2\_14 | 22.26 | 7.92 | 234.9 | 16.0 | 45.28 | 150.78 | 90.00 | 0.00 |
| 3\_1 | 42.46 | 22.26 | 226.7 | 22.0 | 49.63 | 156.57 | 90.00 | 0.00 |
| 3\_2 | 42.46 | 22.26 | 226.7 | 22.0 | 49.28 | 155.99 | 90.00 | 0.00 |
| 3\_3 | 42.46 | 22.26 | 226.7 | 22.0 | 48.93 | 155.41 | 90.00 | 0.00 |
| 3\_4 | 42.46 | 22.26 | 226.7 | 22.0 | 48.74 | 155.10 | 102.45 | 0.26 |
| 3\_5 | 42.46 | 22.26 | 221.1 | 22.0 | 48.47 | 154.87 | 96.15 | 0.35 |
| 3\_6 | 42.46 | 22.26 | 221.1 | 22.0 | 48.08 | 154.36 | 96.86 | 0.29 |
| 3\_7 | 42.46 | 22.26 | 221.1 | 22.0 | 47.69 | 153.85 | 107.44 | 0.62 |
| 3\_8 | 42.46 | 22.26 | 221.1 | 22.0 | 47.30 | 153.35 | 105.38 | 0.00 |
| 3\_9 | 42.46 | 22.26 | 221.1 | 22.0 | 46.91 | 152.85 | 90.00 | 0.00 |
| 3\_10 | 42.46 | 22.26 | 234.9 | 22.0 | 46.53 | 152.23 | 90.00 | 0.00 |
| 3\_11 | 42.46 | 22.26 | 234.9 | 22.0 | 46.23 | 151.62 | 90.00 | 0.00 |
| 3\_12 | 42.46 | 22.26 | 234.9 | 22.0 | 45.93 | 151.01 | 90.00 | 0.00 |
| 3\_13 | 42.46 | 22.26 | 234.9 | 22.0 | 45.63 | 150.40 | 90.00 | 0.00 |
| 1. Time period: 01/12/2006–15/12/2006 | | | | | | | | |
| Element number | Lower side  depth (km) | Upper side  depth (km) | Azimuth  (deg) | Dip (deg.) | Lat, N | Lon, E | Rake (deg.) | Slip (m) |
| 1\_1 | 7.92 | 0.00 | 226.7 | 9.0 | 49.01 | 157.44 | 90.73 | 0.88 |
| 1\_2 | 7.92 | 0.00 | 226.7 | 9.0 | 48.66 | 156.87 | 82.17 | 1.02 |
| 1\_3 | 7.92 | 0.00 | 226.7 | 9.0 | 48.31 | 156.30 | 84.26 | 1.08 |
| 1\_4 | 7.92 | 0.00 | 221.1 | 9.0 | 47.91 | 155.78 | 105.88 | 0.12 |
| 1\_5 | 7.92 | 0.00 | 221.1 | 9.0 | 47.52 | 155.27 | 114.57 | 1.52 |
| 1\_6 | 7.92 | 0.00 | 221.1 | 9.0 | 47.13 | 154.77 | 112.46 | 1.63 |
| 1\_7 | 7.92 | 0.00 | 221.1 | 9.0 | 46.74 | 154.27 | 112.58 | 1.64 |
| 1\_8 | 7.92 | 0.00 | 221.1 | 9.0 | 46.35 | 153.78 | 100.08 | 1.58 |
| 1\_9 | 7.92 | 0.00 | 234.9 | 9.0 | 46.05 | 153.38 | 88.62 | 1.29 |
| 1\_10 | 7.92 | 0.00 | 234.9 | 9.0 | 45.83 | 152.95 | 87.54 | 0.00 |
| 1\_11 | 7.92 | 0.00 | 234.9 | 9.0 | 45.53 | 152.34 | 79.06 | 0.00 |
| 1\_12 | 7.92 | 0.00 | 234.9 | 9.0 | 45.23 | 151.74 | 90.00 | 0.00 |
| 1\_13 | 7.92 | 0.00 | 234.9 | 9.0 | 44.93 | 151.14 | 79.93 | 0.13 |
| 2\_1 | 22.26 | 7.92 | 226.7 | 16.0 | 49.32 | 157.00 | 80.13 | 0.33 |
| 2\_2 | 22.26 | 7.92 | 226.7 | 16.0 | 48.97 | 156.42 | 92.16 | 0.38 |
| 2\_3 | 22.26 | 7.92 | 226.7 | 16.0 | 48.62 | 155.85 | 103.52 | 0.43 |
| 2\_4 | 22.26 | 7.92 | 226.7 | 16.0 | 48.43 | 155.55 | 102.98 | 0.02 |
| 2\_5 | 22.26 | 7.92 | 221.1 | 16.0 | 48.19 | 155.33 | 104.47 | 0.53 |
| 2\_6 | 22.26 | 7.92 | 221.1 | 16.0 | 47.80 | 154.82 | 109.66 | 0.56 |
| 2\_7 | 22.26 | 7.92 | 221.1 | 16.0 | 47.41 | 154.32 | 111.05 | 0.52 |
| 2\_8 | 22.26 | 7.92 | 221.1 | 16.0 | 47.02 | 153.82 | 107.14 | 0.29 |
| 2\_9 | 22.26 | 7.92 | 221.1 | 16.0 | 46.63 | 153.32 | 90.18 | 0.01 |
| 2\_10 | 22.26 | 7.92 | 234.9 | 16.0 | 46.38 | 153.00 | 90.00 | 0.00 |
| 2\_11 | 22.26 | 7.92 | 234.9 | 16.0 | 46.18 | 152.60 | 90.00 | 0.00 |
| 2\_12 | 22.26 | 7.92 | 234.9 | 16.0 | 45.88 | 151.99 | 90.00 | 0.00 |
| 2\_13 | 22.26 | 7.92 | 234.9 | 16.0 | 45.58 | 151.38 | 90.00 | 0.00 |
| 2\_14 | 22.26 | 7.92 | 234.9 | 16.0 | 45.28 | 150.78 | 90.00 | 0.00 |
| 3\_1 | 42.46 | 22.26 | 226.7 | 22.0 | 49.63 | 156.57 | 90.00 | 0.00 |
| 3\_2 | 42.46 | 22.26 | 226.7 | 22.0 | 49.28 | 155.99 | 90.00 | 0.00 |
| 3\_3 | 42.46 | 22.26 | 226.7 | 22.0 | 48.93 | 155.41 | 90.00 | 0.00 |
| 3\_4 | 42.46 | 22.26 | 226.7 | 22.0 | 48.74 | 155.10 | 100.99 | 0.39 |
| 3\_5 | 42.46 | 22.26 | 221.1 | 22.0 | 48.47 | 154.87 | 98.46 | 0.56 |
| 3\_6 | 42.46 | 22.26 | 221.1 | 22.0 | 48.08 | 154.36 | 98.12 | 0.46 |
| 3\_7 | 42.46 | 22.26 | 221.1 | 22.0 | 47.69 | 153.85 | 101.54 | 1.00 |
| 3\_8 | 42.46 | 22.26 | 221.1 | 22.0 | 47.30 | 153.35 | 90.00 | 0.00 |
| 3\_9 | 42.46 | 22.26 | 221.1 | 22.0 | 46.91 | 152.85 | 90.00 | 0.00 |
| 3\_10 | 42.46 | 22.26 | 234.9 | 22.0 | 46.53 | 152.23 | 90.00 | 0.00 |
| 3\_11 | 42.46 | 22.26 | 234.9 | 22.0 | 46.23 | 151.62 | 90.00 | 0.00 |
| 3\_12 | 42.46 | 22.26 | 234.9 | 22.0 | 45.93 | 151.01 | 90.00 | 0.00 |
| 3\_13 | 42.46 | 22.26 | 234.9 | 22.0 | 45.63 | 150.40 | 90.00 | 0.00 |
| 3. Time period: 16/12/2006–30/12/2006 | | | | | | | | |
| Element number | Lower side  depth (km) | Upper side  depth (km) | Azimuth  (deg) | Dip (deg.) | Lat, N | Lon, E | Rake (deg.) | Slip (m) |
| 1\_1 | 7.92 | 0.00 | 226.7 | 9.0 | 49.01 | 157.44 | 90.00 | 0.00 |
| 1\_2 | 7.92 | 0.00 | 226.7 | 9.0 | 48.66 | 156.87 | 90.00 | 0.00 |
| 1\_3 | 7.92 | 0.00 | 226.7 | 9.0 | 48.31 | 156.30 | 90.00 | 0.00 |
| 1\_4 | 7.92 | 0.00 | 221.1 | 9.0 | 47.91 | 155.78 | 90.00 | 0.00 |
| 1\_5 | 7.92 | 0.00 | 221.1 | 9.0 | 47.52 | 155.27 | 90.00 | 0.00 |
| 1\_6 | 7.92 | 0.00 | 221.1 | 9.0 | 47.13 | 154.77 | 95.17 | 0.83 |
| 1\_7 | 7.92 | 0.00 | 221.1 | 9.0 | 46.74 | 154.27 | 92.38 | 1.07 |
| 1\_8 | 7.92 | 0.00 | 221.1 | 9.0 | 46.35 | 153.78 | 91.16 | 1.17 |
| 1\_9 | 7.92 | 0.00 | 234.9 | 9.0 | 46.05 | 153.38 | 89.15 | 0.00 |
| 1\_10 | 7.92 | 0.00 | 234.9 | 9.0 | 45.83 | 152.95 | 89.44 | 0.00 |
| 1\_11 | 7.92 | 0.00 | 234.9 | 9.0 | 45.53 | 152.34 | 90.00 | 0.00 |
| 1\_12 | 7.92 | 0.00 | 234.9 | 9.0 | 45.23 | 151.74 | 90.00 | 0.00 |
| 1\_13 | 7.92 | 0.00 | 234.9 | 9.0 | 44.93 | 151.14 | 90.00 | 0.00 |
| 2\_1 | 22.26 | 7.92 | 226.7 | 16.0 | 49.32 | 157.00 | 90.00 | 0.00 |
| 2\_2 | 22.26 | 7.92 | 226.7 | 16.0 | 48.97 | 156.42 | 90.00 | 0.00 |
| 2\_3 | 22.26 | 7.92 | 226.7 | 16.0 | 48.62 | 155.85 | 90.00 | 0.00 |
| 2\_4 | 22.26 | 7.92 | 226.7 | 16.0 | 48.43 | 155.55 | 90.00 | 0.00 |
| 2\_5 | 22.26 | 7.92 | 221.1 | 16.0 | 48.19 | 155.33 | 90.00 | 0.00 |
| 2\_6 | 22.26 | 7.92 | 221.1 | 16.0 | 47.80 | 154.82 | 89.62 | 0.00 |
| 2\_7 | 22.26 | 7.92 | 221.1 | 16.0 | 47.41 | 154.32 | 91.15 | 0.00 |
| 2\_8 | 22.26 | 7.92 | 221.1 | 16.0 | 47.02 | 153.82 | 91.27 | 0.00 |
| 2\_9 | 22.26 | 7.92 | 221.1 | 16.0 | 46.63 | 153.32 | 90.18 | 0.00 |
| 2\_10 | 22.26 | 7.92 | 234.9 | 16.0 | 46.38 | 153.00 | 90.00 | 0.00 |
| 2\_11 | 22.26 | 7.92 | 234.9 | 16.0 | 46.18 | 152.60 | 90.00 | 0.00 |
| 2\_12 | 22.26 | 7.92 | 234.9 | 16.0 | 45.88 | 151.99 | 90.00 | 0.00 |
| 2\_13 | 22.26 | 7.92 | 234.9 | 16.0 | 45.58 | 151.38 | 90.00 | 0.00 |
| 2\_14 | 22.26 | 7.92 | 234.9 | 16.0 | 45.28 | 150.78 | 90.00 | 0.00 |
| 3\_1 | 42.46 | 22.26 | 226.7 | 22.0 | 49.63 | 156.57 | 90.00 | 0.00 |
| 3\_2 | 42.46 | 22.26 | 226.7 | 22.0 | 49.28 | 155.99 | 90.00 | 0.00 |
| 3\_3 | 42.46 | 22.26 | 226.7 | 22.0 | 48.93 | 155.41 | 90.00 | 0.00 |
| 3\_4 | 42.46 | 22.26 | 226.7 | 22.0 | 48.74 | 155.10 | 90.91 | 0.00 |
| 3\_5 | 42.46 | 22.26 | 221.1 | 22.0 | 48.47 | 154.87 | 90.17 | 0.00 |
| 3\_6 | 42.46 | 22.26 | 221.1 | 22.0 | 48.08 | 154.36 | 89.11 | 0.00 |
| 3\_7 | 42.46 | 22.26 | 221.1 | 22.0 | 47.69 | 153.85 | 89.15 | 0.00 |
| 3\_8 | 42.46 | 22.26 | 221.1 | 22.0 | 47.30 | 153.35 | 90.06 | 0.00 |
| 3\_9 | 42.46 | 22.26 | 221.1 | 22.0 | 46.91 | 152.85 | 90.00 | 0.00 |
| 3\_10 | 42.46 | 22.26 | 234.9 | 22.0 | 46.53 | 152.23 | 90.00 | 0.00 |
| 3\_11 | 42.46 | 22.26 | 234.9 | 22.0 | 46.23 | 151.62 | 90.00 | 0.00 |
| 3\_12 | 42.46 | 22.26 | 234.9 | 22.0 | 45.93 | 151.01 | 90.00 | 0.00 |
| 3\_13 | 42.46 | 22.26 | 234.9 | 22.0 | 45.63 | 150.40 | 90.00 | 0.00 |
| 4. Time period: 31/12/2006–12/01/2007 | | | | | | | | |
| Element number | Lower side  depth (km) | Upper side  depth (km) | Azimuth  (deg) | Dip (deg.) | Lat, N | Lon, E | Rake (deg.) | Slip (m) |
| 1\_1 | 7.92 | 0.00 | 226.7 | 9.0 | 49.01 | 157.44 | 90.00 | 0.00 |
| 1\_2 | 7.92 | 0.00 | 226.7 | 9.0 | 48.66 | 156.87 | 90.00 | 0.00 |
| 1\_3 | 7.92 | 0.00 | 226.7 | 9.0 | 48.31 | 156.30 | 90.00 | 0.00 |
| 1\_4 | 7.92 | 0.00 | 221.1 | 9.0 | 47.91 | 155.78 | 90.00 | 0.00 |
| 1\_5 | 7.92 | 0.00 | 221.1 | 9.0 | 47.52 | 155.27 | 90.00 | 0.00 |
| 1\_6 | 7.92 | 0.00 | 221.1 | 9.0 | 47.13 | 154.77 | 91.08 | 0.00 |
| 1\_7 | 7.92 | 0.00 | 221.1 | 9.0 | 46.74 | 154.27 | 91.32 | 0.68 |
| 1\_8 | 7.92 | 0.00 | 221.1 | 9.0 | 46.35 | 153.78 | 91.20 | 1.17 |
| 1\_9 | 7.92 | 0.00 | 234.9 | 9.0 | 46.05 | 153.38 | 90.55 | 0.23 |
| 1\_10 | 7.92 | 0.00 | 234.9 | 9.0 | 45.83 | 152.95 | 90.23 | 0.00 |
| 1\_11 | 7.92 | 0.00 | 234.9 | 9.0 | 45.53 | 152.34 | 90.00 | 0.00 |
| 1\_12 | 7.92 | 0.00 | 234.9 | 9.0 | 45.23 | 151.74 | 90.00 | 0.00 |
| 1\_13 | 7.92 | 0.00 | 234.9 | 9.0 | 44.93 | 151.14 | 90.00 | 0.00 |
| 2\_1 | 22.26 | 7.92 | 226.7 | 16.0 | 49.32 | 157.00 | 90.00 | 0.00 |
| 2\_2 | 22.26 | 7.92 | 226.7 | 16.0 | 48.97 | 156.42 | 90.00 | 0.00 |
| 2\_3 | 22.26 | 7.92 | 226.7 | 16.0 | 48.62 | 155.85 | 90.00 | 0.00 |
| 2\_4 | 22.26 | 7.92 | 226.7 | 16.0 | 48.43 | 155.55 | 90.00 | 0.00 |
| 2\_5 | 22.26 | 7.92 | 221.1 | 16.0 | 48.19 | 155.33 | 90.00 | 0.00 |
| 2\_6 | 22.26 | 7.92 | 221.1 | 16.0 | 47.80 | 154.82 | 89.88 | 0.00 |
| 2\_7 | 22.26 | 7.92 | 221.1 | 16.0 | 47.41 | 154.32 | 90.95 | 0.00 |
| 2\_8 | 22.26 | 7.92 | 221.1 | 16.0 | 47.02 | 153.82 | 91.16 | 0.00 |
| 2\_9 | 22.26 | 7.92 | 221.1 | 16.0 | 46.63 | 153.32 | 90.64 | 0.00 |
| 2\_10 | 22.26 | 7.92 | 234.9 | 16.0 | 46.38 | 153.00 | 90.00 | 0.00 |
| 2\_11 | 22.26 | 7.92 | 234.9 | 16.0 | 46.18 | 152.60 | 90.00 | 0.00 |
| 2\_12 | 22.26 | 7.92 | 234.9 | 16.0 | 45.88 | 151.99 | 90.00 | 0.00 |
| 2\_13 | 22.26 | 7.92 | 234.9 | 16.0 | 45.58 | 151.38 | 90.00 | 0.00 |
| 2\_14 | 22.26 | 7.92 | 234.9 | 16.0 | 45.28 | 150.78 | 90.00 | 0.00 |
| 3\_1 | 42.46 | 22.26 | 226.7 | 22.0 | 49.63 | 156.57 | 90.00 | 0.00 |
| 3\_2 | 42.46 | 22.26 | 226.7 | 22.0 | 49.28 | 155.99 | 90.00 | 0.00 |
| 3\_3 | 42.46 | 22.26 | 226.7 | 22.0 | 48.93 | 155.41 | 90.00 | 0.00 |
| 3\_4 | 42.46 | 22.26 | 226.7 | 22.0 | 48.74 | 155.10 | 89.52 | 0.00 |
| 3\_5 | 42.46 | 22.26 | 221.1 | 22.0 | 48.47 | 154.87 | 89.42 | 0.00 |
| 3\_6 | 42.46 | 22.26 | 221.1 | 22.0 | 48.08 | 154.36 | 89.17 | 0.00 |
| 3\_7 | 42.46 | 22.26 | 221.1 | 22.0 | 47.69 | 153.85 | 89.26 | 0.00 |
| 3\_8 | 42.46 | 22.26 | 221.1 | 22.0 | 47.30 | 153.35 | 89.76 | 0.00 |
| 3\_9 | 42.46 | 22.26 | 221.1 | 22.0 | 46.91 | 152.85 | 90.00 | 0.00 |
| 3\_10 | 42.46 | 22.26 | 234.9 | 22.0 | 46.53 | 152.23 | 90.00 | 0.00 |
| 3\_11 | 42.46 | 22.26 | 234.9 | 22.0 | 46.23 | 151.62 | 90.00 | 0.00 |
| 3\_12 | 42.46 | 22.26 | 234.9 | 22.0 | 45.93 | 151.01 | 90.00 | 0.00 |
| 3\_13 | 42.46 | 22.26 | 234.9 | 22.0 | 45.63 | 150.40 | 90.00 | 0.00 |

Table 8.

Cumulative posteseismic horizontal displacements of KurilNet stations averaged over 14-days intervals used in modeling (calculated in ITRF2008 reference frame relative to North American plate). The interseismic strain rate is taken into account.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Station | PARM | KHAM | MATC | KETC | URUP | ITUR | KUNA | SHIK |
| Latitude, N Longitude, E | 50.67  156.12 | 49.16  154.45 | 48.04  153.23 | 47.30  152.49 | 46.23  150.57 | 45.23  147.87 | 44.04  145.86 | 43.87  146.83 |
| Displacement  Decimal  date | North Displacement UN (mm)±σN (mm)  East Displacement UE (mm)±σE (mm) | | | | | | | |
| 2007.667 | 0.00±0.52  0.00±0.47 | — | 0.00±0.45  0.00±0.40 | 0.00±0.49  0.00±0.44 | 0.00±0.95  0.00±0.61 | 0.00±0.48  0.00±0.43 | 0.00±0.49  0.00±0.44 | 0.00±0.46  0.00±0.42 |
| 2007.749 | 0.41±0.52  -3.08±0.48 | — | -8.67±0.45  7.36±0.40 | -9.05±0.5  9.78±0.45 | -3.01±0.94  0.06±0.71 | -0.89±0.49  -1.03±0.45 | 0.33±0.50  -1.41±0.47 | 0.21±0.47  -2.91±0.43 |
| 2007.832 | 0.73±0.49  -1.18±0.42 | — | -18.10±0.42  14.88±0.35 | -18.40±0.45  19.66±0.39 | -3.42±0.76  2.01±0.61 | 0.20±0.45  -0.53±0.38 | 1.75±0.48  -2.11±0.41 | 1.56±0.44  -4.93±0.37 |
| 2007.914 | 2.85±0.48  -4.11±0.39 | — | -24.35±0.40  22.48±0.33 | -24.43±0.43  28.69±0.36 | -3.01±0.57  3.96±0.48 | 1.74±0.44  0.30±0.37 | 4.02±0.47  -2.27±0.40 | 3.97±0.42  -4.76±0.35 |
| 2007.999 | 3.5±0.44  -5.58±0.36 | — | -31.95±0.38  26.65±0.31 | -32.23±0.40  34.82±0.33 | -4.44±0.49  2.39±0.40 | 1.93±0.40  -1.71±0.34 | 4.22±0.44  -4.64±0.37 | 4.68±0.38  -8.54±0.32 |
| 2008.081 | 3.38±0.47  -5.54±0.42 | — | -37.52±0.41  31.88±0.36 | -37.24± 0.42  41.84±0.37 | -5.95±2.90  0.22±2.64 | 4.19±0.41  -2.51±0.36 | 7.51±0.45  -7.56±0.40 | 7.08±0.39  -11.53±0.34 |
| 2008.163 | 4.65±0.49  -7.46±0.43 | — | -44.06+0.41  36.23±0.36 | -43.92±0.43  47.94±0.38 | — | 4.17±0.42  -3.46±0.37 | 6.98±0.46  -8.96±0.40 | 6.86±0.41  -14.24±0.36 |
| 2008.245 | 5.04±0.64  -5.35±0.57 | — | -51.95±0.47  41.35±0.40 | -52.87±0.51  56.83±0.45 | — | 4.06±0.49  -3.71±0.42 | 5.66±0.53  -8.00±0.45 | 6.30±0.46  -16.29±0.39 |
| 2008.327 | 5.41±0.52  -7.91±0.45 | — | -56.65±0.40  47.45±0.33 | -59.13±0.43  64.44±0.36 | — | 5.72±0.42  -2.66±0.35 | 7.39±0.46  -8.31±0.38 | 8.98±0.40  -16.55±0.33 |
| 2008.408 | 6.68±0.50  -8.56±0.42 | — | -60.18±0.40  51.78±0.33 | -63.72±0.44  70.12±0.37 | — | 7.30±0.44  -4.46±0.37 | 10.02±0.47  -11.07±0.39 | 10.97±0.42  -20.09±0.35 |
| 2008.490 | 6.49±0.48  -9.75±0.40 | — | -66.21±0.40  55.76±0.33 | -68.70±0.44  76.04±0.37 | — | 8.58±0.45  -4.71±0.38 | 11.74±0.45  -12.24±0.38 | 12.96±0.42  -21.97±0.36 |
| 2008.572 | 8.31±0.48  -12.03±0.42 | 0.00±1.09  0.00±0.93 | -68.88±0.43  58.13±0.38 | -72.80±0.47  78.85±0.41 | -4.67±0.87  5.18±0.65 | 9.54±0.46  -7.13±0.41 | 13.60±0.48  -15.48±0.42 | 14.79±0.45  -26.57±0.39 |
| 2008.654 | 8.97±0.50  -13.24±0.43 | -2.53±0.44  0.77±0.37 | -73.63±0.44  61.52±0.37 | -80.17± 0.49  83.19±0.41 | -5.25±0.61  5.34±0.46 | 10.59±0.49  -7.70±0.41 | 15.16±0.51  -17.06±0.42 | 15.62±0.48  -28.35±0.40 |
| 2008.736 | 10.89±0.58  -14.21±0.49 | -4.30±0.50  2.62±0.41 | -78.34±0.50  65.42±0.42 | -83.76± 0.54  89.93±0.45 | -4.66±0.52  5.34±0.43 | 10.80±0.54  -8.81±0.45 | 16.49±0.56  -19.28±0.46 | 16.45±0.52  -32.00±0.43 |
| 2008.818 | 14.04±0.54  -16.14±0.46 | -3.34±0.43  4.69±0.36 | -80.80±0.45  68.75±0.37 | -88.18±0.49  96.44±0.4 | -3.54±0.46  6.54±0.38 | 12.44±0.48  -8.85±0.40 | 17.98±0.50  -20.66±0.42 | 18.69±0.46  -33.39±0.38 |
| 2008.900 | 13.09±0.49  -17.93±0.43 | -5.09±0.41  4.52±0.36 | -85.46±0.41  72.20±0.36 | -91.89±0.44  100.88±0.38 | -3.89±0.78  5.65±0.67 | 14.09±0.45  -10.11±0.39 | 18.61±0.47  -22.91±0.41 | 20.43±0.42  -35.80±0.37 |
| 2008.980 | 15.12±0.55  -19.05±0.47 | -5.37±0.46  5.96±0.39 | -88.06±0.45  76.21±0.39 | -95.11±0.5  106.54±0.42 | — | 15.11±0.55  -10.03±0.48 | 20.47±0.56  -24.06±0.48 | 22.73±0.48  -37.81±0.41 |
| 2009.037 | 15.27±0.69  -15.59±0.62 | -7.46±0.60  6.00±0.55 | -91.88±0.61  78.24±0.57 | -98.58± 0.65  109.54±0.6 | — | — | 19.71±0.71  -24.99±0.66 | 22.09±0.62  -39.74±0.59 |
| 2009.081 | 17.61±0.67  -15.82±0.61 | -8.89±0.58  8.94±0.53 | -93.35±0.59  79.12±0.55 | -100.11±0.61  110.62±0.57 | — | — | 20.76±0.66  -25.11±0.61 | 23.21±0.58  -40.21±0.55 |
| 2009.163 | 19.03±0.48  -21.25±0.44 | -9.53±0.40  9.87±0.37 | -96.85±0.41  81.35±0.38 | -103.50±0.43  114.67±0.4 | — | — | 21.98±0.48  -26.27±0.45 | 23.49±0.65  -40.44±0.58 |
| 2009.245 | 16.35±0.51  -20.48±0.45 | -12.94±0.44  9.86±0.40 | -101.87±0.41  84.30±0.38 | -108.93±0.45  119.18±0.41 | — | — | 20.53±0.50  -26.95±0.45 | — |
| 2009.327 | 16.75±0.53  -20.73±0.45 | -13.11±0.45  12.26±0.39 | -104.06±0.44  87.98±0.39 | -111.73± 0.47  124.39±0.41 | — | — | 22.74±0.67  -27.39±0.58 | — |
| 2009.410 | 19.76±0.56  -20.94±0.47 | -12.46±0.47  14.15±0.40 | -106.19±0.46  91.97±0.40 | -114.32±0.49  130.07±0.42 | — | — | 25.52±0.67  -28.08±0.58 | 27.81±0.67  -48.86±0.58 |
| 2009.492 | 19.61±0.65  -23.82±0.55 | -15.03±0.61  12.41±0.51 | -107.48±0.60  93.84±0.5 | -119.29±0.64  133.82±0.53 | — | — | 26.19±0.66  -31.80±0.56 | 29.40±0.63  -52.45±0.53 |
| 2009.574 | 21.66±0.50  -23.65±0.42 | -14.37±0.45  13.44±0.38 | -108.80±0.45  96.55±0.38 | -118.91±0.49  136.66±0.41 | — | — | 28.93±0.49  -33.19±0.42 | 31.62±0.48  54.32±0.40 |
| 2009.656 | 20.03±0.49  -26.02±0.41 | -16.97±0.45  13.50±0.38 | -113.93±0.46  98.13±0.38 | -124.37± 0.49  137.63±0.41 | — | — | 28.27±0.49  -35.62±0.41 | 31.09±0.47  -57.97±0.39 |
| 2009.738 | 21.52±0.48  -27.81±0.39 | -17.29±0.45  15.22±0.36 | -115.75±0.45  100.84±0.37 | -126.99±0.48  142.29±0.39 | — | — | 29.84±0.50  -36.55±0.41 | 32.16±0.47  -59.99±0.38 |
| 2009.821 | 23.33±0.5  -28.76±0.41 | -18.78±0.44  15.64±0.36 | -119.40±0.44  103.91±0.36 | -131.39±0.47  148.50±0.39 | — | — | 30.70±0.48  -38.54±0.40 | 32.66±0.45  -62.40±0.38 |
| 2009.903 | 23.61±0.51  -33.53±0.42 | -18.07±0.40  16.29±0.33 | -121.77±0.40  107.10±0.34 | -133.44± 0.43  152.49±0.36 | — | — | 30.96±0.45  -41.02±0.39 | 33.54±0.42  -65.72±0.36 |
| 2009.999 | 25.44±0.41  -31.27±0.35 | -16.71±0.76  15.58±0.63 | -122.75± 0.36  108.82±0.3 | -134.62±0.37  154.85±0.32 | — | — | 33.18±0.41  -42.61±0.36 | 36.94±0.36  -67.98±0.31 |
| 2010.081 | 24.84±0.46  -34.15±0.39 | -19.34±0.40  15.28±0.34 | -126.74±0.40  109.47±0.35 | -138.74±0.43  157.57±0.37 | — | — | 33.36±0.46  -45.24±0.40 | 37.19±0.40  -71.89±0.35 |
| 2010.163 | 27.87±0.47  -36.81±0.41 | -18.97±0.39  15.51±0.34 | -127.94±0.37  110.57±0.32 | -140.70±0.41  160.49±0.35 | — | — | 35.63±0.44  -48.17±0.38 | 40.08±0.38  -75.38±0.33 |
| 2010.410 | 27.95±0.57  -37.65±0.46 | -21.72±0.50  17.74±0.41 | -135.83±0.48  119.08±0.39 | -150.83± 0.51  171.77±0.42 | — | — | — | 43.81±0.49  -81.56±0.40 |

Table 9.

Parameters of the “postseismic” source model of the First Simushir earthquake on November 15, 2006 (numbers of finite elements are given according to Fig. 2). “Lat, N” and “Lon, E” are coordinates of center of corresponding rectangular element.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Element number | Lower side  depth (km) | Upper side  depth (km) | Azimuth  (deg) | Dip (deg.) | Lat, N | Lon, E | Rake (deg.) | Slip (m) |
| 1\_1 | 7.92 | 0.00 | 226.7 | 9.0 | 49.01 | 157.44 | 85.18 | 0.17 |
| 1\_2 | 7.92 | 0.00 | 226.7 | 9.0 | 48.66 | 156.87 | 70.49 | 0.21 |
| 1\_3 | 7.92 | 0.00 | 226.7 | 9.0 | 48.31 | 156.30 | 82.54 | 0.23 |
| 1\_4 | 7.92 | 0.00 | 221.1 | 9.0 | 47.91 | 155.78 | 111.18 | 0.81 |
| 1\_5 | 7.92 | 0.00 | 221.1 | 9.0 | 47.52 | 155.27 | 114.26 | 3.01 |
| 1\_6 | 7.92 | 0.00 | 221.1 | 9.0 | 47.13 | 154.77 | 113.05 | 6.77 |
| 1\_7 | 7.92 | 0.00 | 221.1 | 9.0 | 46.74 | 154.27 | 107.55 | 10.76 |
| 1\_8 | 7.92 | 0.00 | 221.1 | 9.0 | 46.35 | 153.78 | 95.60 | 11.72 |
| 1\_9 | 7.92 | 0.00 | 234.9 | 9.0 | 46.05 | 153.38 | 82.03 | 5.72 |
| 1\_10 | 7.92 | 0.00 | 234.9 | 9.0 | 45.83 | 152.95 | 72.61 | 7.06 |
| 1\_11 | 7.92 | 0.00 | 234.9 | 9.0 | 45.53 | 152.34 | 65.21 | 2.31 |
| 1\_12 | 7.92 | 0.00 | 234.9 | 9.0 | 45.23 | 151.74 | 72.04 | 0.22 |
| 1\_13 | 7.92 | 0.00 | 234.9 | 9.0 | 44.93 | 151.14 | 105.64 | 0.24 |
| 2\_1 | 22.26 | 7.92 | 226.7 | 16.0 | 49.32 | 157.00 | 60.51 | 0.03 |
| 2\_2 | 22.26 | 7.92 | 226.7 | 16.0 | 48.97 | 156.42 | 98.88 | 0.04 |
| 2\_3 | 22.26 | 7.92 | 226.7 | 16.0 | 48.62 | 155.85 | 116.20 | 0.10 |
| 2\_4 | 22.26 | 7.92 | 226.7 | 16.0 | 48.43 | 155.55 | 108.77 | 0.92 |
| 2\_5 | 22.26 | 7.92 | 221.1 | 16.0 | 48.19 | 155.33 | 111.43 | 0.11 |
| 2\_6 | 22.26 | 7.92 | 221.1 | 16.0 | 47.80 | 154.82 | 120.00 | 0.16 |
| 2\_7 | 22.26 | 7.92 | 221.1 | 16.0 | 47.41 | 154.32 | 120.00 | 2.51 |
| 2\_8 | 22.26 | 7.92 | 221.1 | 16.0 | 47.02 | 153.82 | 111.04 | 1.70 |
| 2\_9 | 22.26 | 7.92 | 221.1 | 16.0 | 46.63 | 153.32 | 60.00 | 0.41 |
| 2\_10 | 22.26 | 7.92 | 234.9 | 16.0 | 46.38 | 153.00 | 60.13 | 1.20 |
| 2\_11 | 22.26 | 7.92 | 234.9 | 16.0 | 46.18 | 152.60 | 60.00 | 4.74 |
| 2\_12 | 22.26 | 7.92 | 234.9 | 16.0 | 45.88 | 151.99 | 60.00 | 0.73 |
| 2\_13 | 22.26 | 7.92 | 234.9 | 16.0 | 45.58 | 151.38 | 60.00 | 0.14 |
| 2\_14 | 22.26 | 7.92 | 234.9 | 16.0 | 45.28 | 150.78 | 90.00 | 0.00 |
| 3\_1 | 42.46 | 22.26 | 226.7 | 22.0 | 49.63 | 156.57 | 60.00 | 5.20 |
| 3\_2 | 42.46 | 22.26 | 226.7 | 22.0 | 49.28 | 155.99 | 60.88 | 3.77 |
| 3\_3 | 42.46 | 22.26 | 226.7 | 22.0 | 48.93 | 155.41 | 118.10 | 5.62 |
| 3\_4 | 42.46 | 22.26 | 226.7 | 22.0 | 48.74 | 155.10 | 116.94 | 2.78 |
| 3\_5 | 42.46 | 22.26 | 221.1 | 22.0 | 48.47 | 154.87 | 99.47 | 3.91 |
| 3\_6 | 42.46 | 22.26 | 221.1 | 22.0 | 48.08 | 154.36 | 96.61 | 0.02 |
| 3\_7 | 42.46 | 22.26 | 221.1 | 22.0 | 47.69 | 153.85 | 119.22 | 4.70 |
| 3\_8 | 42.46 | 22.26 | 221.1 | 22.0 | 47.30 | 153.35 | 103.85 | 0.36 |
| 3\_9 | 42.46 | 22.26 | 221.1 | 22.0 | 46.91 | 152.85 | 120.00 | 0.20 |
| 3\_10 | 42.46 | 22.26 | 234.9 | 22.0 | 46.53 | 152.23 | 60.00 | 0.15 |
| 3\_11 | 42.46 | 22.26 | 234.9 | 22.0 | 46.23 | 151.62 | 60.00 | 2.13 |
| 3\_12 | 42.46 | 22.26 | 234.9 | 22.0 | 45.93 | 151.01 | 60.12 | 2.90 |
| 3\_13 | 42.46 | 22.26 | 234.9 | 22.0 | 45.63 | 150.40 | 119.97 | 4.85 |