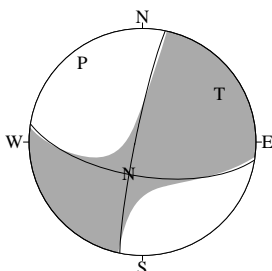


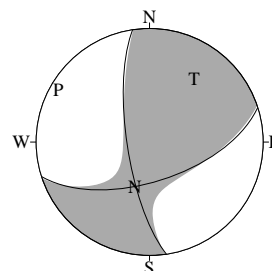
CMT SOLUTIONS FOR EARTHQUAKES IN DECEMBER, 2018

2018/12/03 17:08:23.1
CENTRAL WAKAYAMA PREF
Hypo.:33°51.9'N 135°24.4'E 48km



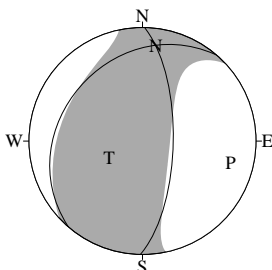
Cent.:33°51.9'N 135°24.4'E 48km $\Delta t = 0.4$
Mo: 2.79×10^{15} N·m Mw:4.2 Mj:4.0 (sec)
mrr: 0.45 mtt:-1.08 mff: 0.64
mrt:-0.18 mrf:-1.10 mtf:-2.39 ($\times 10^{15}$ N·m)
STR DIP SLIP MOM AZM PLG
NP1:192° 85° 25° P-axis:-2.95 323° 13°
NP2: 99° 65° 174° T-axis: 2.62 58° 21°
N-axis: 0.33 203° 65°
V.R.: 78% ϵ :-0.11 N:9 COMP:11

2018/12/03 17:15:17.4
SHIMOKITA PENINSULA REG
Hypo.:40°51.9'N 141°25.0'E 87km



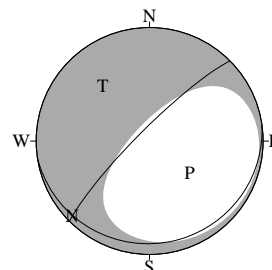
Cent.:40°51.9'N 141°25.0'E 87km $\Delta t = 0.5$
Mo: 0.99×10^{16} N·m Mw:4.6 Mj:4.6 (sec)
mrr: 0.31 mtt: 0.23 mff:-0.54
mrt: 0.24 mrf:-0.36 mtf:-0.76 ($\times 10^{16}$ N·m)
STR DIP SLIP MOM AZM PLG
NP1: 72° 61° 161° P-axis:-1.03 300° 8°
NP2:172° 74° 30° T-axis: 0.95 35° 32°
N-axis: 0.09 198° 56°
V.R.: 81% ϵ :-0.08 N:25 COMP:43

2018/12/04 04:15:18.9
E OFF IWATE PREF
Hypo.:39°11.8'N 142°22.6'E 34km



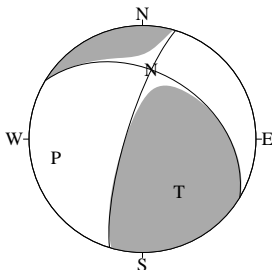
Cent.:39°11.8'N 142°22.8'E 34km $\Delta t = 0.4$
Mo: 3.36×10^{15} N·m Mw:4.3 Mj:4.5 (sec)
mrr: 1.96 mtt: 0.58 mff:-2.54
mrt:-0.05 mrf: 2.27 mtf:-1.10 ($\times 10^{15}$ N·m)
STR DIP SLIP MOM AZM PLG
NP1: 1° 68° 73° P-axis:-3.72 104° 21°
NP2:221° 28° 126° T-axis: 3.01 243° 63°
N-axis: 0.71 8° 16°
V.R.: 75% ϵ :-0.19 N:15 COMP:18

2018/12/08 10:54: 2.5
E OFF FUKUSHIMA PREF
Hypo.:37° 1.8'N 141°20.6'E 50km



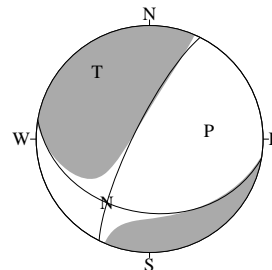
Cent.:37° 9.8'N 141°20.8'E 38km $\Delta t = 6.0$
Mo: 3.73×10^{16} N·m Mw:5.0 Mj:5.0 (sec)
mrr:-1.52 mtt: 1.15 mff: 0.38
mrt: 2.36 mrf: 2.66 mtf:-0.15 ($\times 10^{16}$ N·m)
STR DIP SLIP MOM AZM PLG
NP1: 82° 11° -53° P-axis:-4.19 128° 53°
NP2:225° 82° -96° T-axis: 3.27 320° 36°
N-axis: 0.93 226° 6°
V.R.: 86% ϵ :-0.22 N:23 COMP:46

2018/12/10 00:21:40.2
FAR S OFF TOKAI DISTRICT
Hypo.:33°14.4'N 138° 5.5'E 367km



Cent.:33°12.4'N 138° 4.6'E 352km $\Delta t = 3.5$
Mo: 8.32×10^{16} N·m Mw:5.2 Mj:5.2 (sec)
mrr: 2.57 mtt: 2.45 mff:-5.03
mrt:-3.11 mrf:-5.26 mtf: 3.62 ($\times 10^{16}$ N·m)
STR DIP SLIP MOM AZM PLG
NP1:301° 41° 18° P-axis:-8.08 258° 23°
NP2:197° 78° 129° T-axis: 8.57 145° 43°
N-axis:-0.49 7° 38°
V.R.: 87% ϵ : 0.06 N:39 COMP:84

2018/12/11 09:26:43.3
NEAR KUNASHIRI ISLAND
Hypo.:43°39.7'N 146°21.6'E 106km

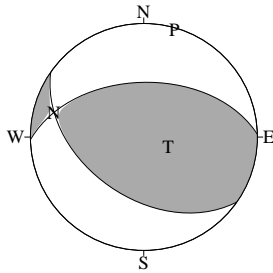


Cent.:43°44.8'N 146°21.6'E 105km $\Delta t = 0.6$
Mo: 1.77×10^{16} N·m Mw:4.8 Mj:4.7 (sec)
mrr:-0.56 mtt: 0.83 mff:-0.28
mrt: 0.54 mrf: 1.23 mtf: 0.90 ($\times 10^{16}$ N·m)
STR DIP SLIP MOM AZM PLG
NP1:100° 35° -20° P-axis:-1.68 82° 46°
NP2:206° 79° -124° T-axis: 1.87 322° 26°
N-axis:-0.19 214° 33°
V.R.: 91% ϵ : 0.10 N:16 COMP:24

EQUAL AREA PROJECTON, LOWER HEMISPHERE.

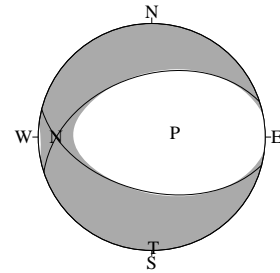
Hypo.:Location of hypocenter, Cent.:Location of centroid, Δt :Centroid time minus origin time
Mo:Total scalar moment, Mw:Moment Magnitude, Mj:JMA Magnitude
mrr,mtt,mff,mrt,mrf,mtf:Moment tensor components, STR,DIP,SLIP:Fault parameters of nodal plane
MOM,AZM,PLG:Moment tensor component, azimuth and plunge of P-, T-, N-axis
V.R.:Variance Reduction, ϵ :Non-double couple component ratio, N:Number of stations, COMP:Number of components

2018/12/14 17:04:33.6
SE OFF MIYAGI PREF
Hypo.:37°51.6'N 142°29.0'E 44km



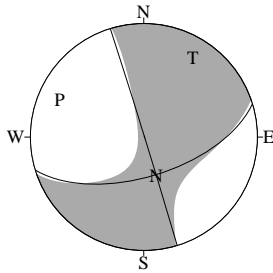
Cent.:37°53.1'N 142°29.3'E 33km $\Delta t = 0.1$
Mo: $1.82 \times 10^{16} \text{N}\cdot\text{m}$ Mw:4.8 Mj:4.8 (sec)
mrr:-1.62 mtt:-1.64 mff: 0.02
mrt:-0.28 mrf:-0.51 mtf: 0.55 ($\times 10^{16} \text{N}\cdot\text{m}$)
STR DIP SLIP MOM AZM PLG
NP1:125° 46° 117° P-axis:-1.81 16° 2°
NP2:269° 50° 65° T-axis: 1.82 112° 71°
N-axis:-0.02 285° 19°
V.R.: 78% ϵ : 0.01 N:22 COMP:32

2018/12/16 01:28:18.4
SOUTHERN IWATE PREF
Hypo.:39°15.8'N 141°43.1'E 62km



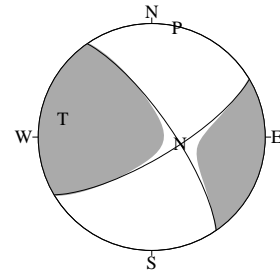
Cent.:39°15.7'N 141°43.6'E 62km $\Delta t = 0.5$
Mo: $6.12 \times 10^{15} \text{N}\cdot\text{m}$ Mw:4.5 Mj:4.6 (sec)
mrr:-5.73 mtt: 5.86 mff:-0.13
mrt:-0.66 mrf: 1.85 mtf: 0.22 ($\times 10^{15} \text{N}\cdot\text{m}$)
STR DIP SLIP MOM AZM PLG
NP1:104° 50° -68° P-axis:-6.33 79° 73°
NP2:252° 44° -114° T-axis: 5.90 179° 3°
N-axis: 0.42 270° 17°
V.R.: 78% ϵ :-0.07 N:27 COMP:37

2018/12/16 06:21: 5.0
TAIWAN REGION
Hypo.:23°43.6'N 121°55.2'E 31km



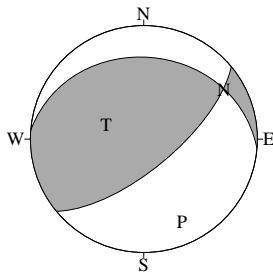
Cent.:23°44.8'N 121°55.2'E 24km $\Delta t = 2.8$
Mo: $6.02 \times 10^{16} \text{N}\cdot\text{m}$ Mw:5.1 Mj:5.4 (sec)
mrr: 0.45 mtt: 2.84 mff:-3.29
mrt: 0.34 mrf:-2.92 mtf:-4.31 ($\times 10^{16} \text{N}\cdot\text{m}$)
STR DIP SLIP MOM AZM PLG
NP1: 73° 61° -179° P-axis:-6.41 294° 20°
NP2:343° 89° -29° T-axis: 5.64 32° 19°
N-axis: 0.77 162° 61°
V.R.: 85% ϵ :-0.12 N:10 COMP:22

2018/12/18 21:06:14.7
NEAR AMAMI-OSHIMA ISLAND
Hypo.:29°48.1'N 130°45.2'E 58km



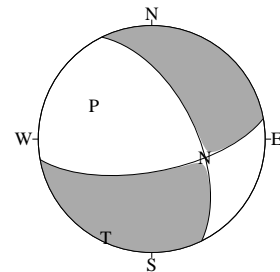
Cent.:29°38.9'N 130°45.0'E 60km $\Delta t = 1.4$
Mo: $2.06 \times 10^{16} \text{N}\cdot\text{m}$ Mw:4.8 Mj:4.5 (sec)
mrr: 0.19 mtt:-1.83 mff: 1.65
mrt: 0.14 mrf: 0.74 mtf: 0.80 ($\times 10^{16} \text{N}\cdot\text{m}$)
STR DIP SLIP MOM AZM PLG
NP1: 59° 75° 15° P-axis:-2.01 13° 1°
NP2:325° 76° 164° T-axis: 2.12 282° 21°
N-axis:-0.11 104° 69°
V.R.: 77% ϵ : 0.05 N:19 COMP:29

2018/12/20 14:16:19.1
NEAR ISHIGAKIJIMA ISLAND
Hypo.:23°57.5'N 123°35.3'E 32km



Cent.:23°57.6'N 123°35.2'E 32km $\Delta t = 0.5$
Mo: $5.76 \times 10^{15} \text{N}\cdot\text{m}$ Mw:4.4 Mj:4.5 (sec)
mrr: 3.68 mtt:-3.93 mff: 0.25
mrt: 2.64 mrf: 3.08 mtf:-1.47 ($\times 10^{15} \text{N}\cdot\text{m}$)
STR DIP SLIP MOM AZM PLG
NP1: 50° 69° 71° P-axis:-5.76 155° 21°
NP2:274° 29° 130° T-axis: 5.76 291° 61°
N-axis: 0.00 58° 18°
V.R.: 77% ϵ : 0.00 N:6 COMP:10

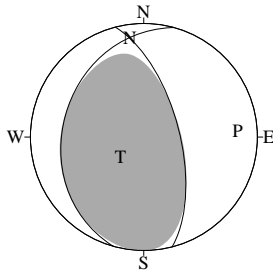
2018/12/20 15:58:27.0
TOYAMA GIFU BORDER REG
Hypo.:36°29.9'N 137°29.6'E 6km



Cent.:36°30.0'N 137°29.6'E 10km $\Delta t = 0.3$
Mo: $2.25 \times 10^{15} \text{N}\cdot\text{m}$ Mw:4.2 Mj:4.3 (sec)
mrr:-0.95 mtt: 1.52 mff:-0.57
mrt:-0.73 mrf:-0.87 mtf:-1.41 ($\times 10^{15} \text{N}\cdot\text{m}$)
STR DIP SLIP MOM AZM PLG
NP1: 80° 66° -145° P-axis:-2.24 300° 41°
NP2:334° 58° -28° T-axis: 2.25 205° 5°
N-axis:-0.01 109° 49°
V.R.: 77% ϵ : 0.01 N:19 COMP:25

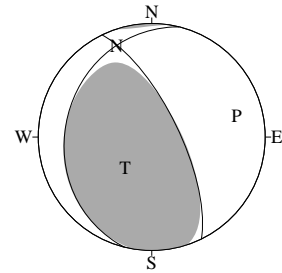
EQUAL AREA PROJECTON, LOWER HEMISPHERE.

2018/12/24 09:18: 8.1
 FAR SE OFF BOSO PEN
 Hypo.:34° 3.4'N 141°33.7'E 33km



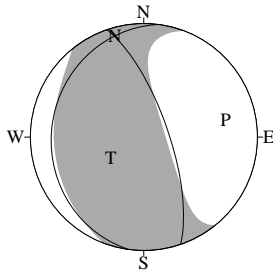
Cent.:34°14.0'N 141°33.2'E 13km $\Delta t=10.5$
 Mo: 3.20×10^{17} N·m Mw:5.6 Mj:5.9 (sec)
 mrr: 2.48 mtt: 0.01 mff:-2.49
 mrt:-0.86 mrf: 1.76 mtf:-0.06 ($\times 10^{17}$ N·m)
 STR DIP SLIP MOM AZM PLG
 NP1:345° 64° 76° P-axis:-3.10 86° 18°
 NP2:195° 29° 117° T-axis: 3.30 229° 68°
 N-axis:-0.20 352° 13°
 V.R.: 87% ϵ : 0.06 N:20 COMP:47

2018/12/24 09:43:11.0
 FAR SE OFF BOSO PEN
 Hypo.:34° 3.9'N 141°45.8'E 33km



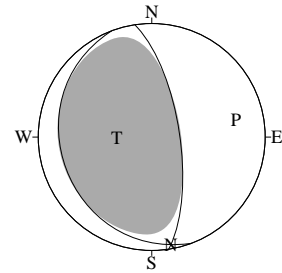
Cent.:34°12.6'N 141°44.0'E 13km $\Delta t= 9.0$
 Mo: 2.80×10^{17} N·m Mw:5.6 Mj:5.9 (sec)
 mrr: 1.78 mtt: 0.10 mff:-1.89
 mrt:-1.22 mrf: 1.79 mtf: 0.15 ($\times 10^{17}$ N·m)
 STR DIP SLIP MOM AZM PLG
 NP1:334° 71° 75° P-axis:-2.80 76° 24°
 NP2:194° 25° 127° T-axis: 2.90 221° 61°
 N-axis:-0.20 339° 15°
 V.R.: 84% ϵ : 0.06 N:41 COMP:88

2018/12/25 09:10:30.6
 FAR SE OFF BOSO PEN
 Hypo.:33°57.0'N 141°43.6'E 36km



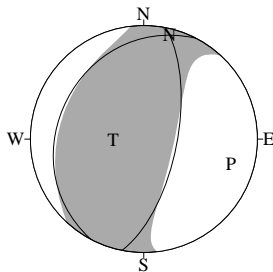
Cent.:34° 0.8'N 141°41.8'E 10km $\Delta t= 9.2$
 Mo: 1.10×10^{17} N·m Mw:5.3 Mj:5.7 (sec)
 mrr: 0.55 mtt: 0.24 mff:-0.78
 mrt:-0.30 mrf: 0.87 mtf: 0.17 ($\times 10^{17}$ N·m)
 STR DIP SLIP MOM AZM PLG
 NP1:341° 72° 81° P-axis:-1.30 78° 27°
 NP2:188° 20° 115° T-axis: 1.00 238° 62°
 N-axis: 0.20 344° 8°
 V.R.: 76% ϵ :-0.19 N:20 COMP:43

2018/12/25 18:46:12.2
 NEAR CHICHIJIMA ISLAND
 Hypo.:28°58.5'N 142°15.0'E 44km



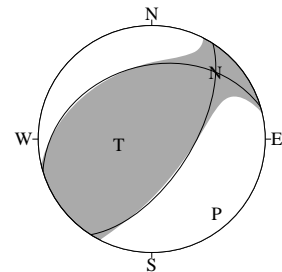
Cent.:29° 1.3'N 142°15.0'E 14km $\Delta t= 3.0$
 Mo: 6.01×10^{16} N·m Mw:5.1 Mj:4.8 (sec)
 mrr: 4.06 mtt:-0.60 mff:-3.47
 mrt:-0.49 mrf: 4.57 mtf: 0.86 ($\times 10^{16}$ N·m)
 STR DIP SLIP MOM AZM PLG
 NP1:351° 70° 94° P-axis:-5.81 78° 25°
 NP2:159° 20° 78° T-axis: 6.22 269° 65°
 N-axis:-0.41 170° 4°
 V.R.: 80% ϵ : 0.07 N:9 COMP:18

2018/12/27 01:48:52.1
 E OFF MIYAGI PREF
 Hypo.:38°43.1'N 142°15.3'E 39km



Cent.:38°48.0'N 142°15.4'E 39km $\Delta t= 0.7$
 Mo: 1.59×10^{16} N·m Mw:4.7 Mj:4.6 (sec)
 mrr: 1.04 mtt: 0.13 mff:-1.17
 mrt: 0.17 mrf: 1.04 mtf:-0.47 ($\times 10^{16}$ N·m)
 STR DIP SLIP MOM AZM PLG
 NP1: 11° 66° 83° P-axis:-1.72 106° 21°
 NP2:207° 25° 105° T-axis: 1.46 268° 68°
 N-axis: 0.26 14° 6°
 V.R.: 82% ϵ :-0.15 N:27 COMP:35

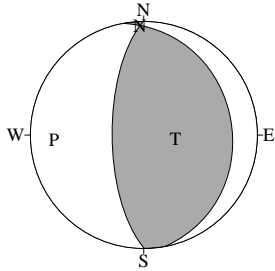
2018/12/30 04:08:30.9
 HIDAKA MOUNTAINS REGION
 Hypo.:42°19.6'N 143° 6.8'E 51km



Cent.:42°13.8'N 143° 6.7'E 56km $\Delta t= 2.0$
 Mo: 1.00×10^{17} N·m Mw:5.3 Mj:5.3 (sec)
 mrr: 0.77 mtt:-0.53 mff:-0.24
 mrt: 0.16 mrf: 0.51 mtf:-0.58 ($\times 10^{17}$ N·m)
 STR DIP SLIP MOM AZM PLG
 NP1: 33° 62° 67° P-axis:-1.10 139° 14°
 NP2:254° 36° 125° T-axis: 1.00 261° 66°
 N-axis: 0.10 44° 20°
 V.R.: 83% ϵ :-0.10 N:31 COMP:50

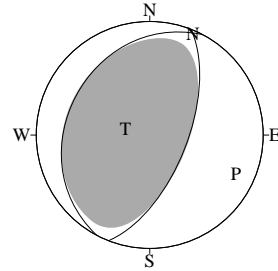
EQUAL AREA PROJECTON, LOWER HEMISPHERE.

2018/12/30 23:26:33.4
 SEA OF JAPAN
 Hypo.:38°17.9'N 133°53.5'E 461km



Cent.:38°18.9'N 133°52.8'E 462km $\Delta t = 0.9$
 Mo: 2.63×10^{16} N·m Mw:4.9 Mj:5.0 (sec)
 mrr: 1.87 mtt: 0.00 mff:-1.87
 mrt:-0.06 mrf:-1.84 mtf: 0.18 ($\times 10^{16}$ N·m)
 STR DIP SLIP MOM AZM PLG
 NP1:349° 23° 80° P-axis:-2.63 267° 22°
 NP2:180° 67° 94° T-axis: 2.63 97° 67°
 N-axis: 0.00 358° 4°
 V.R.: 85% ϵ : 0.00 N:16 COMP:16

2018/12/31 23:10:23.2
 E OFF FUKUSHIMA PREF
 Hypo.:37°20.5'N 141°33.6'E 45km



Cent.:37°19.2'N 141°33.6'E 49km $\Delta t = 3.8$
 Mo: 4.77×10^{16} N·m Mw:5.1 Mj:5.0 (sec)
 mrr: 4.00 mtt:-0.88 mff:-3.12
 mrt: 0.90 mrf: 2.66 mtf:-1.32 ($\times 10^{16}$ N·m)
 STR DIP SLIP MOM AZM PLG
 NP1: 21° 63° 87° P-axis:-4.63 114° 18°
 NP2:208° 27° 96° T-axis: 4.91 285° 72°
 N-axis:-0.28 23° 3°
 V.R.: 87% ϵ : 0.06 N:15 COMP:30

EQUAL AREA PROJECTON, LOWER HEMISPHERE.