DAFTAR PUSTAKA

Afnimar. 2009. Seismologi. Bandung: Institut Teknologi Bandung.

Azizah, L.N., Tjahjono, A., dan Sabtaji, A. (2019). *Relokasi Hiposenter Gempa Bumi dan Model Struktur Kecepatan 1 Dimensi Gelombang P dengan Menggunakan Metode Coupled Velocity – Hyposcenter di Daerah Sulawesi Tengah dan Sekitarnya*. Al-Fiziya Vol II. No. 1. p 1-9. https://doi.org/10.15408/fiziya.v2i1.9514

BMKG. 2021. *Buletin Gempabumi dan Tsunami Tahun 2021*. Tangerang: Badan Meteorologi Klimatologi dan Geofisika Stasiun Geofisika Klas I Tangerang.

Cronin, V. 2004. *A Draft Primer on Focal Mechanism Solution for Geologist*. Journal Earth.

Febyani, S., Pradhana K, M. F. S., Rivaldy, M., Syafri, I., Nur, A. A., Embara, P., dan Nugroho, S. D. 2020. *Analisis Kerentanan Gempa pada Jalur Sesar Baribis menggunakan Metode Microearthquake (MEQ)*. Bulletin of Scientific: GEOLOGY, Vol. 18. No. 1. p 1-12.

Haerudin, N., Alami, F., dan Rustadi. 2019. Mikroseismik, Mikrotremor, dan Microearthquake dalam Ilmu Kebumian. Bandar Lampung: Pusaka Media.

Maryanto, S. 2018. Pengantar Global Seismologi. Malang: Media Nusa Creative.

Kissling, E. 1995. *Program Velest User's Guide-Short Intoduction*. Second draft version.

Kurniati, A. 2017. Aplikasi Mekanisme Fokus dalam Indentifikasi Sesar di Sulawesi Bagian Selatan. Skripsi. Makassar: Universitas Hasanuddin.

Lowrie, W. 2007. *Fundamental of* Geophysics. Cambridge: Cambrigde University Press.

Massinai, M.F.I., Nugraha, A.D., Ramadhan, M., dan Wandono. 2017. *Precise Hypocenter Determination around Palu Koro Fault: a Preliminary Result*. IOP Conf. Series: Earth and Environment Science 62. https://iopscience.iop.org/article/10.1088/1755-1315/62/1/012056

Munir, M. 2006. Geologi & Mineralogi Tanah. Malang: Pustaka Jaya.

Noor, D. 2012. Pengantar Geologi. Bogor: Universitas Pakuan

ɛan, H dan Surono. 2011. *Tektono-Stratigrafi Bagian Timur Sulawesi*. ɔDG. Vol. 21 No. 5. p 239-248. tps://doi.org/10.33332/jgsm.geologi.v21i5.150

Priadi, R., Ulfiana, E., dan Ariyanto, P. 2018. *Model Kecepatan Gelombang Sismik 1 DImensi Wilayah Papua*. Jurnal Meteorologi Klimatologi dan Geofisika. Vol. 5 No.1. http://dx.doi.org/10.36754/jmkg.v5i1.67

Purwanti, I dan Ilham. 2017. *Menilik Aktivitas Gempabumi di Sulawesi Tenggara*.

PusGen. 2017. Peta Sumber dan Bahaya Gempa Indonesia Tahun *2017*. Bandung: Badan Penelitian dan Pengembangan Kemetrian PUPR.

Putra, S.A., Nugraha, A.D., Sahara, D.P., Zulfakaria., Puspito, N.T., Muttaqy, F., Supendi, P., dan Daryono. (2023). *Seismicity Patteren of the Great Sumatran Fault System from Hypocenter Relocation of Regional Seismic Network*. Indonesian Journal on Geoscience Vol. 10. No.1. http://dx.doi.org/10.17014/ijog.10.1.83-95

Putri, R.Z.A., Juwono, A.M., dan Rachman. T.D. 2017. *Studi Analisi Penentuan Jenis Sesar Penyebab Gempa Kebumen 25 Januari 2014 dengan Metode Prrgerakan Awal Gelombang P*. Brawijaya Physics Student Journal Vol. 2. No. 1.

Setiadi, T.A.P., Daud, Y., Martha, A.A., Rohadi, S. (2022). *Relokasi Gempabumi Menggunakan Metode Telesismik Double Difference di Wilayah Jawa*. Jurnal Meteorologi dan Geofisika Vol. 23 No.1. p 23-27. https://doi.org/10.31172/jmg.v23i1.842

Stein, S dan Wysession, M. 2003. An Introduction to Seismology, Earthquakes, and Earth Structure. Berlin: Blackwell Publishing.

Rahayu, N.L.P., Trisuandayani, N.K., dan Mursitantyo, A. 2019. *Relokasi Gempabumi Susulan di Seririt pada 14 November 2019 dengan Metode Double Difference*. Buletin Fisika Vol.24 No.1. p 40-48.

Rasmid dan Ramdhan, M.I. 2014. *Interpretasi Episenter dan Hiposenter Sesar Lembang*. Al Hazen Jurnal of Physics. Vol. 1. No. 1.

Shohaya, J.N., Madlazim, Rahmawati, E. 2014. *Model Kecepatan 1-D Gelombang P dan Relokasi Hiposenter Gempabumi di Bengkulu Menggunakan Metode Couple Velocity-Hypocenter*. Jurnal Fisika. Vol. 03. No. 02. p 69-73.

Somputan, A.F. 2012. Struktur Geologi Sulawesi. Perpustakaan Sains Kebumian: Institut Teknologi Bandung.

Surono. 2013. Geologi Lengan Tenggara Sulawesi. Bandung: Badan Geologi Kementrian Energi dan Sumber daya Mineral.

I.I., Lantu., Harimei, B., dan Kartika D.I. (2011). *Studi Aktivitas empabumi Tektonik Berdasarkan Kecepatan Tanah Maksimum di Pulau ılawesi*. Proceedings JCM Makassar 2011The 36th HAGI and 40th IAGI nnual Convention and Exhibition.

Tumangkeng, C.S., Wenas, D.R., dan Umboh, S.I. 2020. *Model Kecepatan 1D Gelombang P dan Relokasi Hiposenter Wilayah Sulawesi Utara dan Sekitarnya menggunkan Metode Couple Velocity-Hypocenter*. Jurnal Pendidikan Fisika Unima. Vol. 1 No. 2. p 1-7.

Waldhauser. F dan Ellsworth W. L. 2000. *A Double Difference Earthquake Location Algorithm: Method and Application to the Northern Hayward Fault, California*. Bulletin of the Seismological Society of America 90, 6, pp. 1353–1368.

Waldhauser, F. 2001. *HypoDD—A Program to Compute Double-Difference Hypocenter Locations*. U.S. Geol. Survey. Open File Report 01-113 Menlo Park, California.

Wulandari, S., Parera, A.F.T., dan Lubis, L.H. 2021. *Relokasi Gempabumi Di Sesar Renun A, B, dan C Dengan Menggunakan Metode Double Difference (Hypo-DD)*. Jurnal Pendidikan Fisika dan Sains. Vol. 4 No. 2.

Zakaria, Z. 2007. *Aplikasi Tektonik Lempeng dalam Sumber Daya Mineral, Energi dan Kewilayahan*. Bulletin of Scientific Contribution. Vol. 5. No. 2. p 123-131.

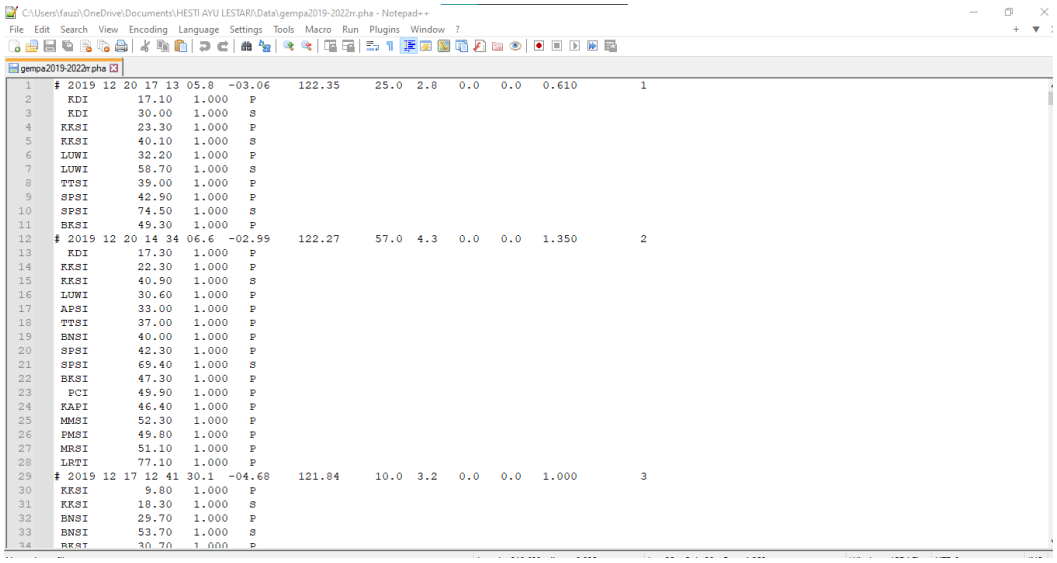
Zakaria, Z dan Sidarto. 2015. *Aktifitas Tektonik di Sulawesi dan Sekitarnya Sejak Mesozoikum Hingga Kini Sebagai Akibat Interaksi Aktifitas Tektonik Lempeng Tektonik Utama di Sekitarnya*. Jurnal Geologi dan Sumberdaya Mineral. https://doi.org/10.33332/jgsm.geologi.v16i3.36

Zuhdi, M. 2019. Pengantar Geologi. Mataram: Penerbit Duta Pustaka Ilmu.

Zulkarnaen, I. 2015. *Analisis Inversi Waveform Tiga Komponen untuk Menentukan Momen Tensor, Pola Bidang Sesar, dan Mekanisme Fokus Gempa Sulawesi Utara Tahun 2014*. Thesis. Surabaya: Institut Teknologi Sepuluh November.

L A M P I R A N

Lampiran 1 Data Katalog yang sudah di konversi dalam bentuk PHA



```
# 2019 12 20 17 13 05.8  -03.06    122.35     25.0  2.8   0.0   0.0   0.610         1
  KDI        17.10   1.000   P
  KDI        30.00   1.000   S
  KKSI       23.30   1.000   P
  KKSI       40.10   1.000   S
  LUWI       32.20   1.000   P
  LUWI       58.70   1.000   S
  TTSI       39.00   1.000   P
  SPSI       42.90   1.000   P
  SPSI       74.50   1.000   S
  BKSI       49.30   1.000   P
# 2019 12 20 14 34 06.6  -02.99    122.27     57.0  4.3   0.0   0.0   1.350         2
  KDI        17.30   1.000   P
  KKSI       22.30   1.000   P
  KKSI       40.90   1.000   S
  LUWI       30.60   1.000   P
  APSI       33.00   1.000   P
  TTSI       37.00   1.000   P
  BNSI       40.00   1.000   P
  SPSI       42.30   1.000   P
  SPSI       69.40   1.000   S
  BKSI       47.30   1.000   P
  PCI        49.90   1.000   P
  KAPI       46.40   1.000   P
  MMSI       52.30   1.000   P
  PMSI       49.80   1.000   P
  MRSI       51.10   1.000   P
  LRTI       77.10   1.000   P
# 2019 12 17 12 41 30.1  -04.68    121.84     10.0  3.2   0.0   0.0   1.000         3
  KKSI        9.80   1.000   P
  KKSI       18.30   1.000   S
  BNSI       29.70   1.000   P
  BNSI       53.70   1.000   S
```

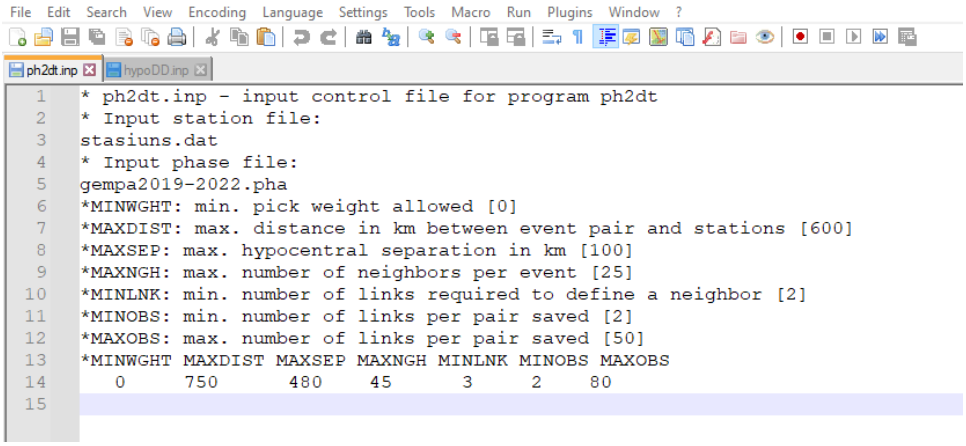
Lampiran 2 Daftar stasiun seismik yang merekam gempabumi Sulawesi Tenggara tahun 2019-2022

Stasiun	Lintang	Bujur
ABJI	-7.8	114.23
APSI	-0.91	121.65
BBBCM	-5.58	120.45
BBCM	-5.04	120.06
BBKI	-3.46	114.84
BBSI	-5.49	122.57
BDCM	-0.87	119.59
BGCM	-0.05	119.88
BHCM	-2.8	122.13
BKB	-1.11	116.9
BKSI	-5.32	120.12
BNSI	-4.4	120.11
BSSI	-6.14	120.49
BTCM	-2.48	121.92
DBNI	-8.5	118.31
DOCM	-0.68	119.75
IGBI	-8.82	115.15
KAPI	-5.01	119.75
KDI	-3.96	122.62
KJCM	-5.56	119.8
KKSI	-4.17	121.65
KLNI	-8.42	116.09
KRSI	-1.82	119.42
LKCI	-3.49	120.89
LKUCM	-3.29	122.23
LOCM	-1.65	120.18
LPCM	-3.5	119.54
LRTI	-8.28	123
LSCM	-4.37	119.9
LUCM	-1.43	120.32
LUWI	-1.04	122.77
MKS	-5.22	119.47

Stasiun	Lintang	Bujur
MMCI	-2.96	119.36
MMRI	-8.86	122.24
MMSI	-2.69	118.91
MPSI	0.34	119.9
MRSI	0.48	121.94
MSCM	-2.54	120.28
MTCM	-2.57	121.05
PCI	-0.91	119.84
PKCI	-4.35	122.34
PLAI	-8.83	117.78
PMCI	-1.17	119.35
PMSI	-3.5	118.91
POCI	-1.42	120.66
PPCM	-3.73	119.73
PSJCM	-7.06	120.62
PWCM	-3.67	120.4
RDCM	-1.3	119.55
RKCM	-2.94	121.58
SDCI	-0.49	119.77
SMKI	-0.45	117.21
SMSI	0.99	122.37
SPSI	-3.96	119.77
SRSI	-2.53	120.88
SWCM	-4.21	120.01
TBCM	-4.91	120.28
TLCM	-2.51	120.79
TOCM	-2.65	121.41
TTSI	-3.05	119.82
TWSI	-8.74	116.88
UKCM	-3.86	122.04
WMCM	-2.22	121.62
WUPCM	-3.01	120.19

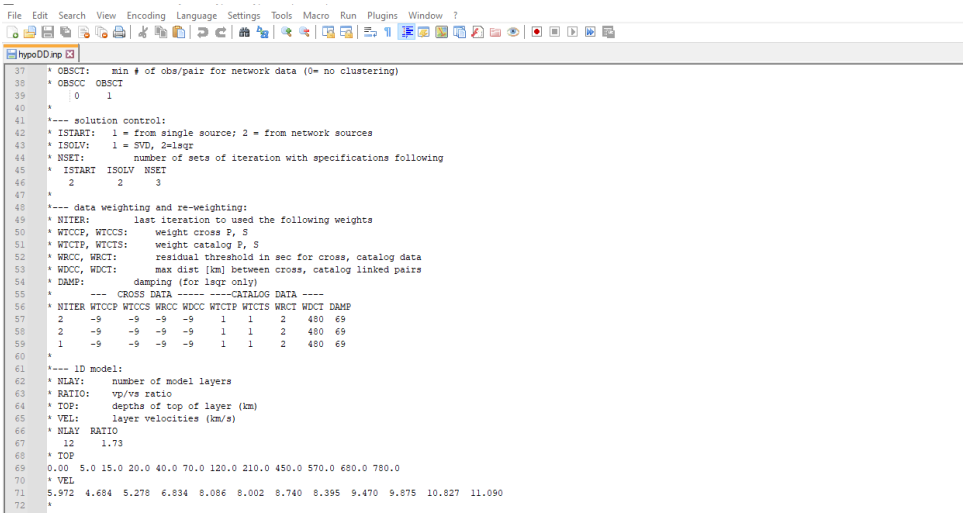
Lampiran 3 Paramater Program Ph2dt dan HypoDD

A. Ph2dt



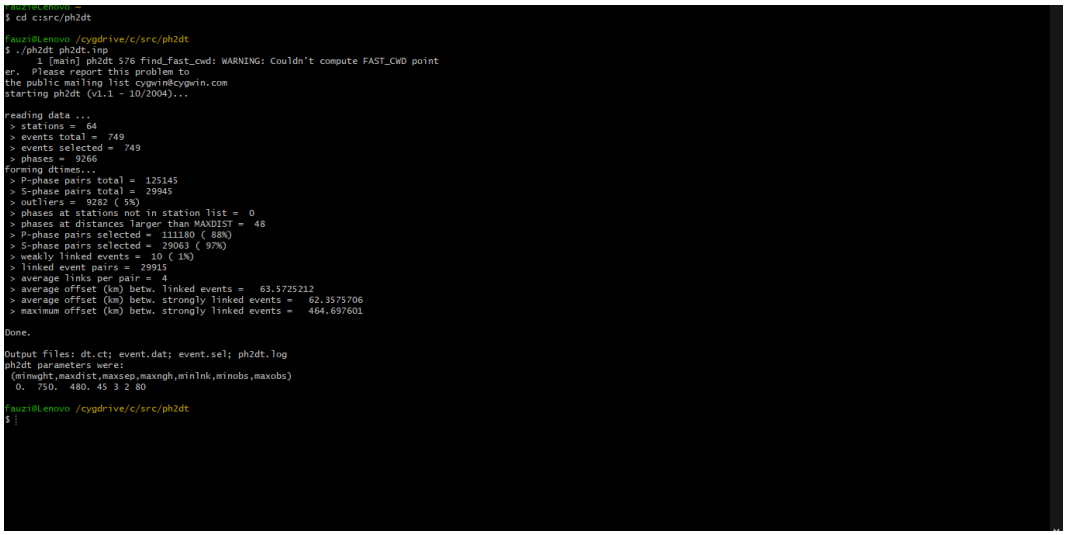
```
* ph2dt.inp - input control file for program ph2dt
* Input station file:
stasiuns.dat
* Input phase file:
gempa2019-2022.pha
*MINWGHT: min. pick weight allowed [0]
*MAXDIST: max. distance in km between event pair and stations [600]
*MAXSEP: max. hypocentral separation in km [100]
*MAXNGH: max. number of neighbors per event [25]
*MINLNK: min. number of links required to define a neighbor [2]
*MINOBS: min. number of links per pair saved [2]
*MAXOBS: max. number of links per pair saved [50]
*MINWGHT MAXDIST MAXSEP MAXNGH MINLNK MINOBS MAXOBS
   0      750       480     45       3      2     80
```

B. HypoDD

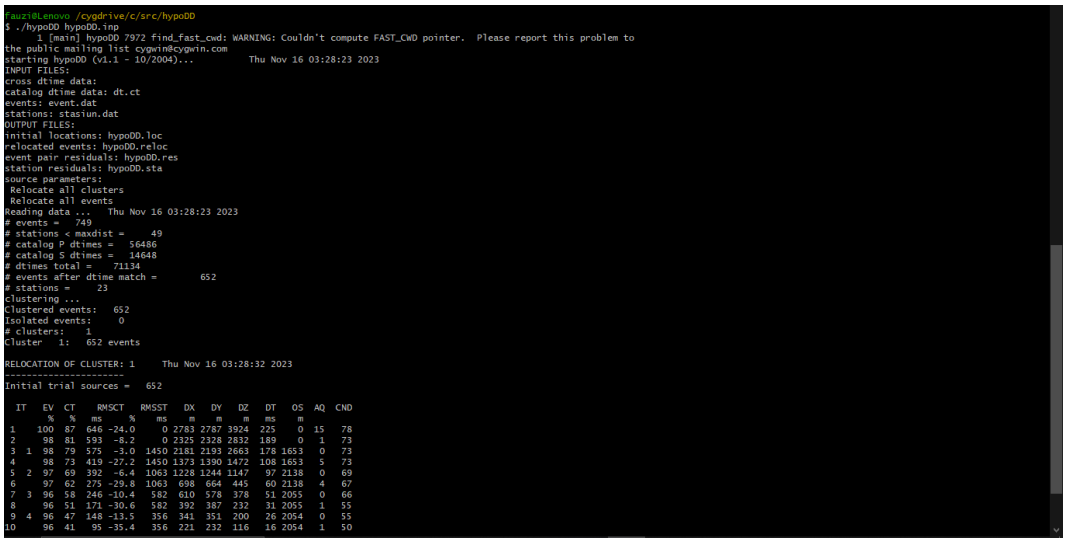


```
* OBSCT:    min # of obs/pair for network data (0= no clustering)
* OBSCC  OBSCT
    0     1
*
*--- solution control:
* ISTART:   1 = from single source; 2 = from network sources
* ISOLV:    1 = SVD, 2=lsqr
* NSET:      number of sets of iteration with specifications following
*  ISTART  ISOLV  NSET
    2       2      3
*
*--- data weighting and re-weighting:
* NITER:       last iteration to used the following weights
* WTCCP, WTCCS:     weight cross P, S
* WTCTP, WTCTS:     weight catalog P, S
* WRCC, WRCT:       residual threshold in sec for cross, catalog data
* WDCC, WDCT:       max dist [km] between cross, catalog linked pairs
* DAMP:         damping (for lsqr only)
*       ---  CROSS DATA -----  ----CATALOG DATA ----
* NITER WTCCP WTCCS WRCC WDCC WTCTP WTCTS WRCT WDCT DAMP
  2     -9     -9   -9   -9     1     1     2    480  69
  2     -9     -9   -9   -9     1     1     2    480  69
  1     -9     -9   -9   -9     1     1     2    480  69
*
*--- 1D model:
* NLAY:     number of model layers
* RATIO:    vp/vs ratio
* TOP:      depths of top of layer (km)
* VEL:      layer velocities (km/s)
* NLAY  RATIO
   12     1.73
* TOP
0.00  5.0 15.0 20.0 40.0 70.0 120.0 210.0 450.0 570.0 680.0 780.0
* VEL
5.972  4.684  5.278  6.834  8.086  8.002  8.740  8.395  9.470  9.875  10.827  11.090
*
```

Lampiran 4 Hasil *Running* Program Ph2dt & HypoDD



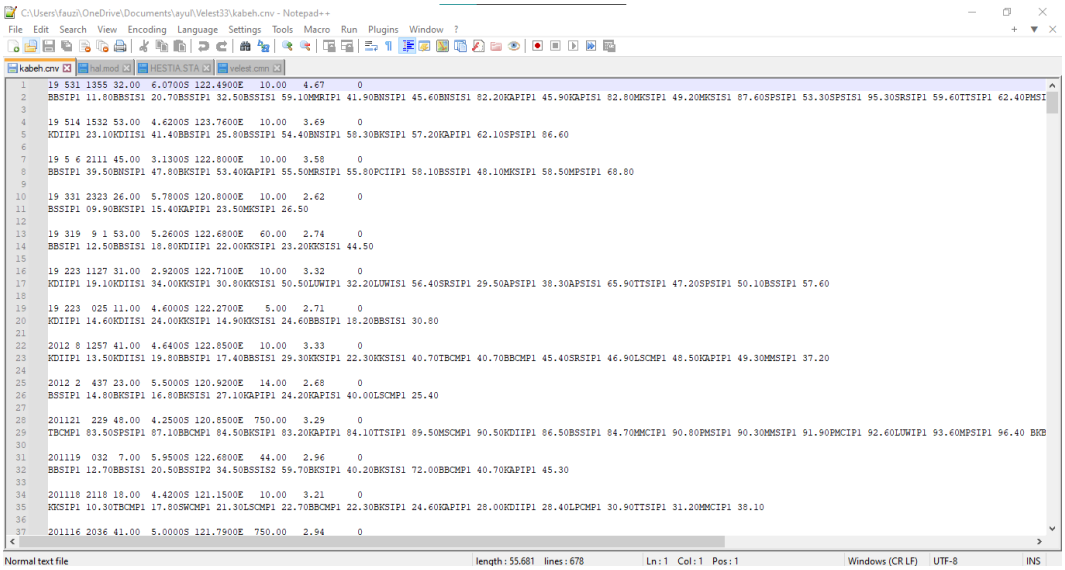
```
$ cd c:src/ph2dt

fauzi@Lenovo /cygdrive/c/src/ph2dt
$ ./ph2dt ph2dt.inp
     1 [main] ph2dt 576 find_fast_cwd: WARNING: Couldn't compute FAST_CWD point
er.  Please report this problem to
the public mailing list cygwin@cygwin.com
starting ph2dt (v1.1 - 10/2004)...

reading data ...
 > stations =  64
 > events total =  749
 > events selected =  749
 > phases =  9266
forming dtimes...
 > P-phase pairs total =  125145
 > S-phase pairs total =  29945
 > outliers =  9282 ( 5%)
 > phases at stations not in station list =  0
 > phases at distances larger than MAXDIST =  48
 > P-phase pairs selected =  111180 ( 88%)
 > S-phase pairs selected =  29063 ( 97%)
 > weakly linked events =  10 ( 1%)
 > linked event pairs =  29915
 > average links per pair =  4
 > average offset (km) betw. linked events =   63.5725212
 > average offset (km) betw. strongly linked events =   62.3575706
 > maximum offset (km) betw. strongly linked events =   464.697601

Done.

Output files: dt.ct; event.dat; event.sel; ph2dt.log
ph2dt parameters were:
  (minwght,maxdist,maxsep,maxngh,min1nk,minobs,maxobs)
  0.  750.  480. 45 3 2 80

fauzi@Lenovo /cygdrive/c/src/ph2dt
$
```



```
fauzi@Lenovo /cygdrive/c/src/hypoDD
$ ./hypoDD hypoDD.inp
     1 [main] hypoDD 7972 find_fast_cwd: WARNING: Couldn't compute FAST_CWD pointer.  Please report this problem to
the public mailing list cygwin@cygwin.com
starting hypoDD (v1.1 - 10/2004)...          Thu Nov 16 03:28:23 2023
INPUT FILES:
cross dtime data:
catalog dtime data: dt.ct
events: event.dat
stations: stasiun.dat
OUTPUT FILES:
initial locations: hypoDD.loc
relocated events: hypoDD.reloc
event pair residuals: hypoDD.res
station residuals: hypoDD.sta
source parameters:
 Relocate all clusters
 Relocate all events
Reading data ...    Thu Nov 16 03:28:23 2023
# events =   749
# stations < maxdist =     49
# catalog P dtimes =   56486
# catalog S dtimes =   14648
# dtimes total =     71134
# events after dtime match =        652
# stations =     23
Clustering ...
Clustered events:   652
Isolated events:     0
# clusters:    1
Cluster   1:   652 events

RELOCATION OF CLUSTER: 1     Thu Nov 16 03:28:32 2023
---------------------
Initial trial sources =   652

  IT   EV  CT    RMSCT   RMSST   DX   DY   DZ   DT   OS  AQ  CND
       %   %    ms      %    ms    m    m    m   ms    m
 1    100  87  646 -24.0     0 2783 2787 3924  225    0  15   78
 2     98  81  593  -8.2     0 2325 2328 2832  189    0   1   73
 3  1  98  79  575  -3.0  1450 2181 2193 2663  178 1653   0   73
 4     98  73  419 -27.2  1450 1373 1390 1472  108 1653   5   73
 5  2  97  69  392  -6.4  1063 1228 1244 1147   97 2138   0   69
 6     97  62  275 -29.8  1063  698  664  445   60 2138   4   67
 7  3  96  58  246 -10.4   582  610  578  378   51 2055   0   66
 8     96  51  171 -30.6   582  392  387  232   31 2055   1   55
 9  4  96  47  148 -13.5   356  341  351  200   26 2054   0   55
10     96  41   95 -35.4   356  221  232  116   16 2054   1   50
```

Lampiran 5 Masukkan file Velest berupa file **.CNV**, **.MOD**, **.STA**

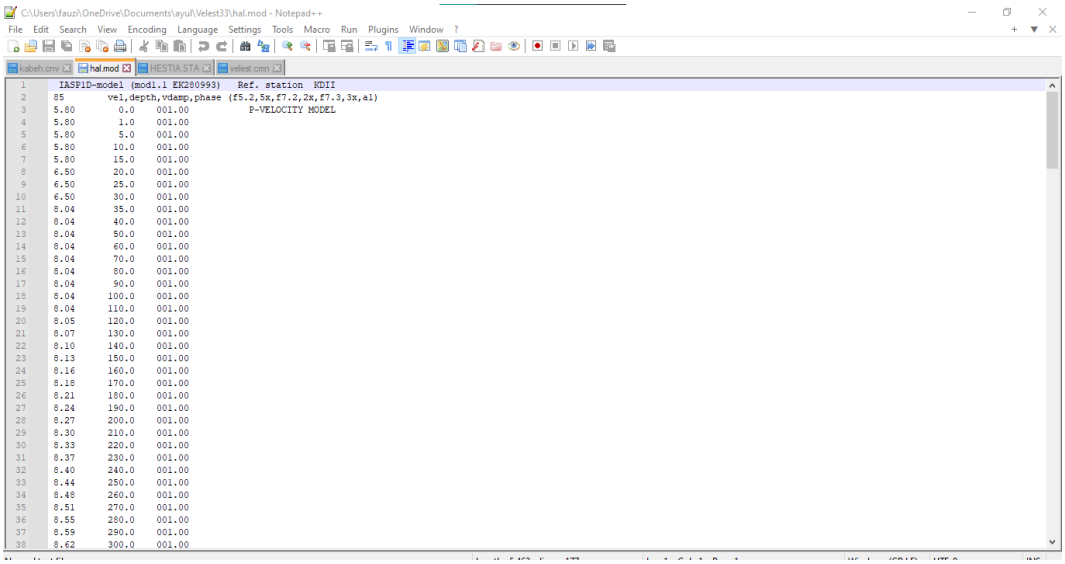
a. .CNV



```
19 531 1355 32.00  6.0700S 122.4900E   10.00    4.67       0
BBSIP1 11.80BBSIS1 20.70BBSIP1 32.50BBSIS1 59.10MMRIP1 41.90BNSIP1 45.60BNSIS1 82.20KAPIP1 45.90KAPIS1 82.80MKSIP1 49.20MKSIS1 87.60SPSIP1 53.30SPSIS1 95.30SRSIP1 59.60TTSIP1 62.40PMSI

19 514 1532 53.00  4.6200S 123.7600E   10.00    3.69       0
KDIIP1 23.10KDIIS1 41.40BBSIP1 25.80BSSIP1 54.40BNSIP1 58.30BKSIP1 57.20KAPIP1 62.10SPSIP1 86.60

19 5 6 2111 45.00  3.1300S 122.8000E   10.00    3.58       0
BBSIP1 39.50BNSIP1 47.80BKSIP1 53.40KAPIP1 55.50MRSIP1 55.80PCIIP1 58.10BSSIP1 48.10MKSIP1 58.50MPSIP1 68.80

19 331 2323 26.00  5.7800S 120.8000E   10.00    2.62       0
BSSIP1 09.90BKSIP1 15.40KAPIP1 23.50MKSIP1 26.50

19 319  9 1 53.00  5.2600S 122.6800E   60.00    2.74       0
BBSIP1 12.50BBSIS1 18.80KDIIP1 22.00KKSIP1 23.20KKSIS1 44.50

19 223 1127 31.00  2.9200S 122.7100E   10.00    3.32       0
KDIIP1 19.10KDIIS1 34.00KKSIP1 30.80KKSIS1 50.50LUWIP1 32.20LUWIS1 56.40SRSIP1 29.50APSIP1 38.30APSIS1 65.90TTSIP1 47.20SPSIP1 50.10BSSIP1 57.60

19 223  025 11.00  4.6000S 122.2700E    5.00    2.71       0
KDIIP1 14.60KDIIS1 24.00KKSIP1 14.90KKSIS1 24.60BBSIP1 18.20BBSIS1 30.80

2012 8 1257 41.00  4.6400S 122.8500E   10.00    3.33       0
KDIIP1 13.50KDIIS1 19.80BBSIP1 17.40BBSIS1 29.30KKSIP1 22.30KKSIS1 40.70TBCMP1 40.70BBCMP1 45.40SRSIP1 46.90LSCMP1 48.50KAPIP1 49.30MMSIP1 37.20

2012 2  437 23.00  5.5000S 120.9200E   14.00    2.68       0
BSSIP1 14.80BKSIP1 16.80BKSIS1 27.10KAPIP1 24.20KAPIS1 40.00LSCMP1 25.40

201121  229 48.00  4.2500S 120.8500E  750.00    3.29       0
TBCMP1 83.50SPSIP1 87.10BBCMP1 84.50BKSIP1 83.20KAPIP1 84.10TTSIP1 89.50MSCMP1 90.50KDIIP1 86.50BSSIP1 84.70MMCIP1 90.80PMSIP1 90.30MMSIP1 91.90PMCIP1 92.60LUWIP1 93.60MPSIP1 96.40 BKB

201119  032  7.00  5.9500S 122.6800E   44.00    2.96       0
BBSIP1 12.70BBSIS1 20.50BSSIP2 34.50BSSIS2 59.70BKSIP1 40.20BKSIS1 72.00BBCMP1 40.70KAPIP1 45.30

201118 2118 18.00  4.4200S 121.1500E   10.00    3.21       0
KKSIP1 10.30TBCMP1 17.80SWCMP1 21.30LSCMP1 22.70BBCMP1 22.30BKSIP1 24.60KAPIP1 28.00KDIIP1 28.40LPCMP1 30.90TTSIP1 31.20MMCIP1 38.10

201116 2036 41.00  5.0000S 121.7900E   750.00    2.94       0
```

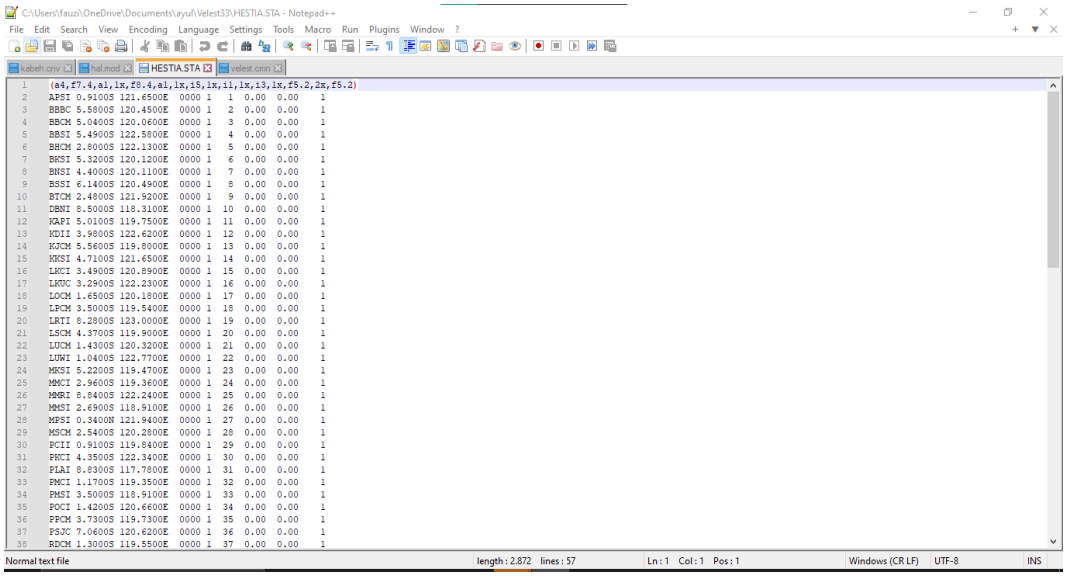
Normal text file length : 55.681 lines : 678 Ln : 1 Col : 1 Pos : 1 Windows (CR LF) UTF-8 INS

b. .MOD



```
 IASP1D-model (mod1.1 EK280993)   Ref. station  KDII
85       vel,depth,vdamp,phase (f5.2,5x,f7.2,2x,f7.3,3x,a1)
5.80       0.0    001.00           P-VELOCITY MODEL
5.80       1.0    001.00
5.80       5.0    001.00
5.80      10.0    001.00
5.80      15.0    001.00
6.50      20.0    001.00
6.50      25.0    001.00
6.50      30.0    001.00
8.04      35.0    001.00
8.04      40.0    001.00
8.04      50.0    001.00
8.04      60.0    001.00
8.04      70.0    001.00
8.04      80.0    001.00
8.04      90.0    001.00
8.04     100.0    001.00
8.04     110.0    001.00
8.05     120.0    001.00
8.07     130.0    001.00
8.10     140.0    001.00
8.13     150.0    001.00
8.16     160.0    001.00
8.18     170.0    001.00
8.21     180.0    001.00
8.24     190.0    001.00
8.27     200.0    001.00
8.30     210.0    001.00
8.33     220.0    001.00
8.37     230.0    001.00
8.40     240.0    001.00
8.44     250.0    001.00
8.48     260.0    001.00
8.51     270.0    001.00
8.55     280.0    001.00
8.59     290.0    001.00
8.62     300.0    001.00
```

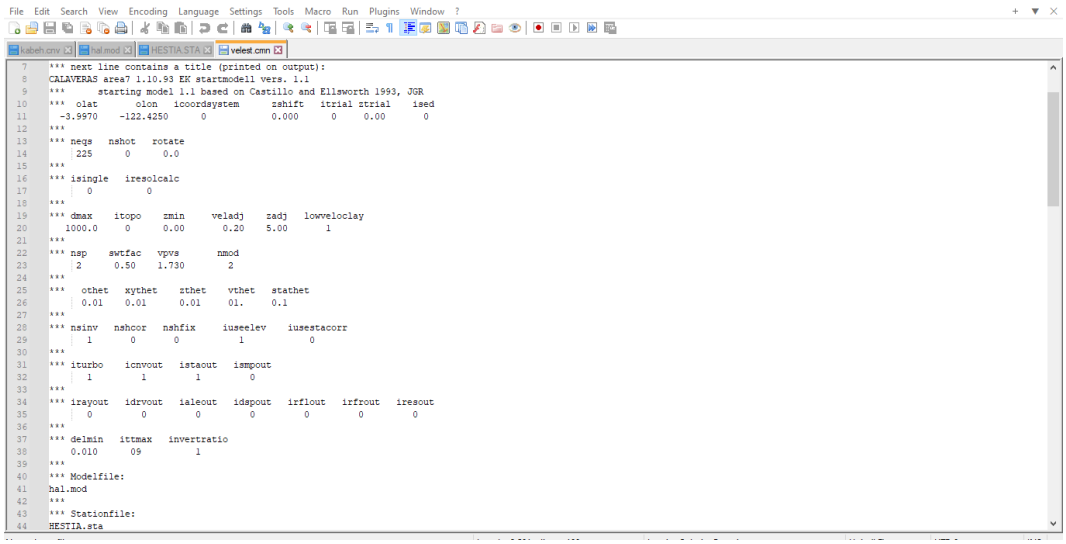
c. .STA



```
(a4,f7.4,a1,1x,f8.4,a1,1x,i5,1x,i1,1x,i3,1x,f5.2,2x,f5.2)
APSI 0.9100S 121.6500E  0000 1   1  0.00  0.00    1
BBBC 5.5800S 120.4500E  0000 1   2  0.00  0.00    1
BBCM 5.0400S 120.0600E  0000 1   3  0.00  0.00    1
BBSI 5.4900S 122.5800E  0000 1   4  0.00  0.00    1
BHCM 2.8000S 122.1300E  0000 1   5  0.00  0.00    1
BKSI 5.3200S 120.1200E  0000 1   6  0.00  0.00    1
BNSI 4.4000S 120.1100E  0000 1   7  0.00  0.00    1
BSSI 6.1400S 120.4900E  0000 1   8  0.00  0.00    1
BTCM 2.4800S 121.9200E  0000 1   9  0.00  0.00    1
DBNI 8.5000S 118.3100E  0000 1  10  0.00  0.00    1
KAPI 5.0100S 119.7500E  0000 1  11  0.00  0.00    1
KDII 3.9800S 122.6200E  0000 1  12  0.00  0.00    1
KJCM 5.5600S 119.8000E  0000 1  13  0.00  0.00    1
KKSI 4.7100S 121.6500E  0000 1  14  0.00  0.00    1
LKCI 3.4900S 120.8900E  0000 1  15  0.00  0.00    1
LMUC 3.2900S 122.2300E  0000 1  16  0.00  0.00    1
LOCM 1.6500S 120.1800E  0000 1  17  0.00  0.00    1
LPCM 3.5000S 119.5400E  0000 1  18  0.00  0.00    1
LRTI 8.2800S 123.0000E  0000 1  19  0.00  0.00    1
LSCM 4.3700S 119.9000E  0000 1  20  0.00  0.00    1
LUCM 1.4300S 120.3200E  0000 1  21  0.00  0.00    1
LUWI 1.0400S 122.7700E  0000 1  22  0.00  0.00    1
MKSI 5.2200S 119.4700E  0000 1  23  0.00  0.00    1
MMCI 2.9600S 119.3600E  0000 1  24  0.00  0.00    1
MMBI 8.8400S 122.2400E  0000 1  25  0.00  0.00    1
MMSI 2.6900S 118.9100E  0000 1  26  0.00  0.00    1
MPSI 0.3400N 121.9400E  0000 1  27  0.00  0.00    1
MSCM 2.5400S 120.2800E  0000 1  28  0.00  0.00    1
PCII 0.9100S 119.8400E  0000 1  29  0.00  0.00    1
PMCI 4.3500S 122.3400E  0000 1  30  0.00  0.00    1
PLAI 8.8300S 117.7800E  0000 1  31  0.00  0.00    1
PMCI 1.1700S 119.3500E  0000 1  32  0.00  0.00    1
PMSI 3.5000S 118.9100E  0000 1  33  0.00  0.00    1
POCI 1.4200S 120.6600E  0000 1  34  0.00  0.00    1
PPCM 3.7300S 119.7300E  0000 1  35  0.00  0.00    1
PSJC 7.0600S 120.6200E  0000 1  36  0.00  0.00    1
RDCM 1.3000S 119.5500E  0000 1  37  0.00  0.00    1
```

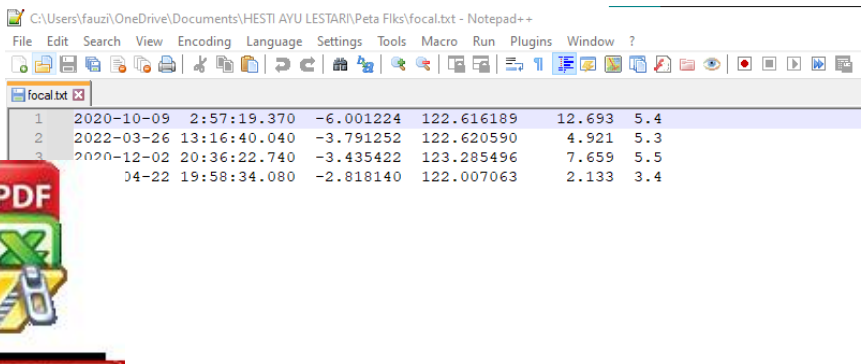
Normal text file — length : 2.872 lines : 57 — Ln : 1 Col : 1 Pos : 1 — Windows (CR LF) — UTF-8 — INS

Lampiran 6 Parameter Control velest.cmn



```
*** next line contains a title (printed on output):
CALAVERAS area7 1.10.93 EK startmodell vers. 1.1
***      starting model 1.1 based on Castillo and Ellsworth 1993, JGR
***  olat       olon    icoordsystem      zshift   itrial itrial    ised
  -3.9970    -122.4250       0              0.000      0     0.00       0
***
*** neqs   nshot   rotate
    225      0      0.0
***
*** isingle   iresolcalc
     0           0
***
*** dmax    itopo    zmin     veladj    zadj   lowveloclay
  1000.0      0      0.00       0.20    5.00       1
***
*** nsp    swtfac   vpvs       nmod
    2       0.50    1.730        2
***
***   othet   xythet    zthet    vthet   stathet
      0.01    0.01      0.01     01.     0.1
***
*** nsinv   nshcor   nshfix     iuseelev    iusestacorr
     1        0        0           1            0
***
*** iturbo    icnvout   istaout   ismpout
     1          1         1         0
***
*** irayout   idrvout   ialeout   idspout   irflout   irfrout   iresout
     0          0         0         0         0         0         0
***
*** delmin   ittmax   invertratio
    0.010      09          1
***
*** Modelfile:
hal.mod
***
*** Stationfile:
HESTIA.sta
```

Lampiran 7 Data yang terpilih untuk pengolahan AZMTAK



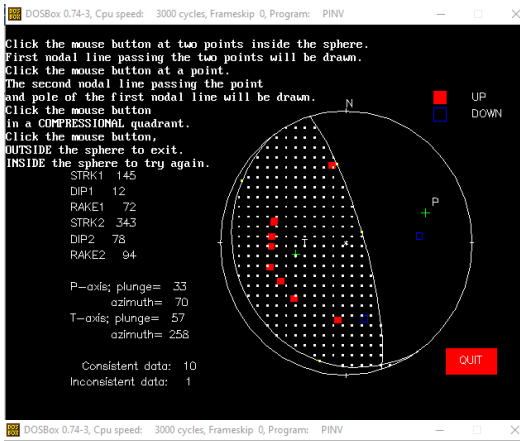
C:\Users\fauzi\OneDrive\Documents\HESTI AYU LESTARI\Peta Flks\focal.txt - Notepad++

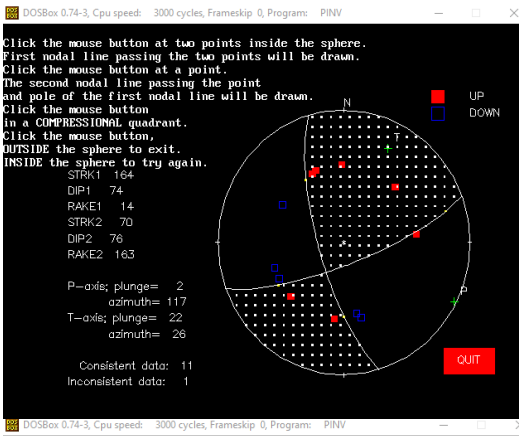
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?

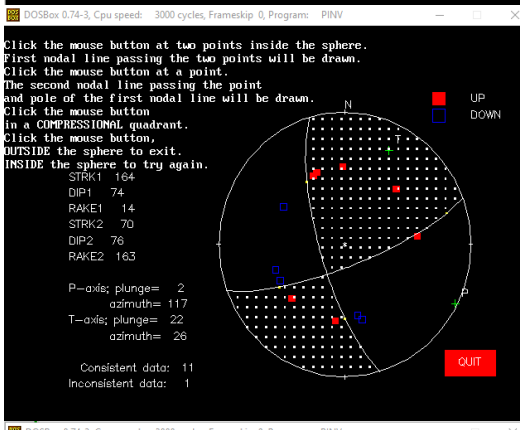
focal.txt

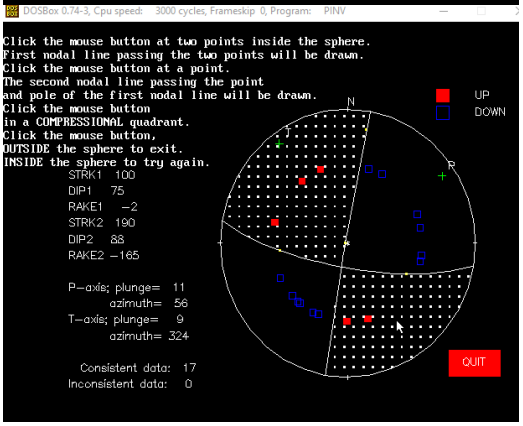
```
2020-10-09  2:57:19.370  -6.001224  122.616189    12.693  5.4
2022-03-26 13:16:40.040  -3.791252  122.620590     4.921  5.3
2020-12-02 20:36:22.740  -3.435422  123.285496     7.659  5.5
       04-22 19:58:34.080  -2.818140  122.007063     2.133  3.4
```

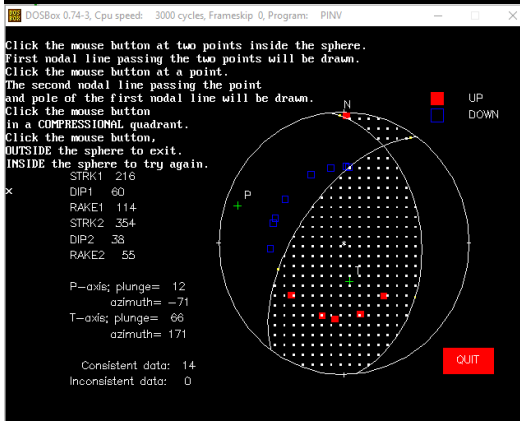
Lampiran 8 Hasil Analisis Mekanisme Fokus pada Program AZMTAK











n 9 Validasi Focal Mechanism dari Global CMT

202204221949A SULAWESI, INDONESIA □

```
Date: 2022/ 4/22   Centroid Time: 19:49:29.5 GMT
Lat=  -2.72  Lon= 122.34
Depth= 12.0   Half duration= 0.6
Centroid time minus hypocenter time:  2.5
Moment Tensor: Expo=23  0.041 0.547 -0.588 0.004 0.406 1.540
Mw = 4.8    mb = 0.0    Ms = 4.6   Scalar Moment = 1.69e+23
Fault plane:  strike=100    dip=76   slip=-2
Fault plane:  strike=190    dip=88   slip=-166
```

202012022036A SULAWESI, INDONESIA □

```
Date: 2020/12/ 2   Centroid Time: 20:36:27.2 GMT
Lat=  -3.40  Lon= 123.38
Depth= 15.5   Half duration= 1.3
Centroid time minus hypocenter time:  4.7
Moment Tensor: Expo=24  0.819 -0.103 -0.716 -0.356 1.550 0.297
Mw = 5.4    mb = 0.0    Ms = 5.2   Scalar Moment = 1.79e+24
Fault plane:  strike=150    dip=14   slip=74
Fault plane:  strike=346    dip=76   slip=94
```

202203251320A SULAWESI, INDONESIA □

```
Date: 2022/ 3/25   Centroid Time: 13:20:16.2 GMT
Lat=  -3.75  Lon= 122.90
Depth= 18.6   Half duration= 0.6
Centroid time minus hypocenter time:  2.0
Moment Tensor: Expo=23  0.770 0.034 -0.803 0.403 0.016 -1.400
Mw = 4.7    mb = 0.0    Ms = 4.9   Scalar Moment = 1.57e+23
Fault plane:  strike=176    dip=63   slip=21
Fault plane:  strike=76    dip=72   slip=152
```

202010090257A FLORES SEA □

```
Date: 2020/10/ 9   Centroid Time:  2:57:22.4 GMT
Lat=  -5.87  Lon= 122.57
Depth= 12.0   Half duration= 1.1
Centroid time minus hypocenter time:  1.6
Moment Tensor: Expo=24  0.905 0.014 -0.919 -0.593 -0.464 -0.226
Mw = 5.3    mb = 0.0    Ms = 5.3   Scalar Moment = 1.2e+24
Fault plane:  strike=354    dip=32   slip=54
Fault plane:  strike=215    dip=65   slip=110
```
