

FOR THE DATA REPOSITORY

BOOTSTRAP METHOD

The bootstrap starts by creating synthetic data sets by randomly drawing N specimens from the measured data with replacement, where N is the number of specimens in the original data set. The best-fit tensor of each specimen can be represented by an array s_i , where i runs from 1 to N . We calculated the average tensor \bar{s} for the N randomly drawn specimens, where

$$\bar{s}_i = \frac{1}{N} \sum_i s_i.$$

The residuals are $\delta_i = s_i - \bar{s}_i$, and the sum of squared residuals is

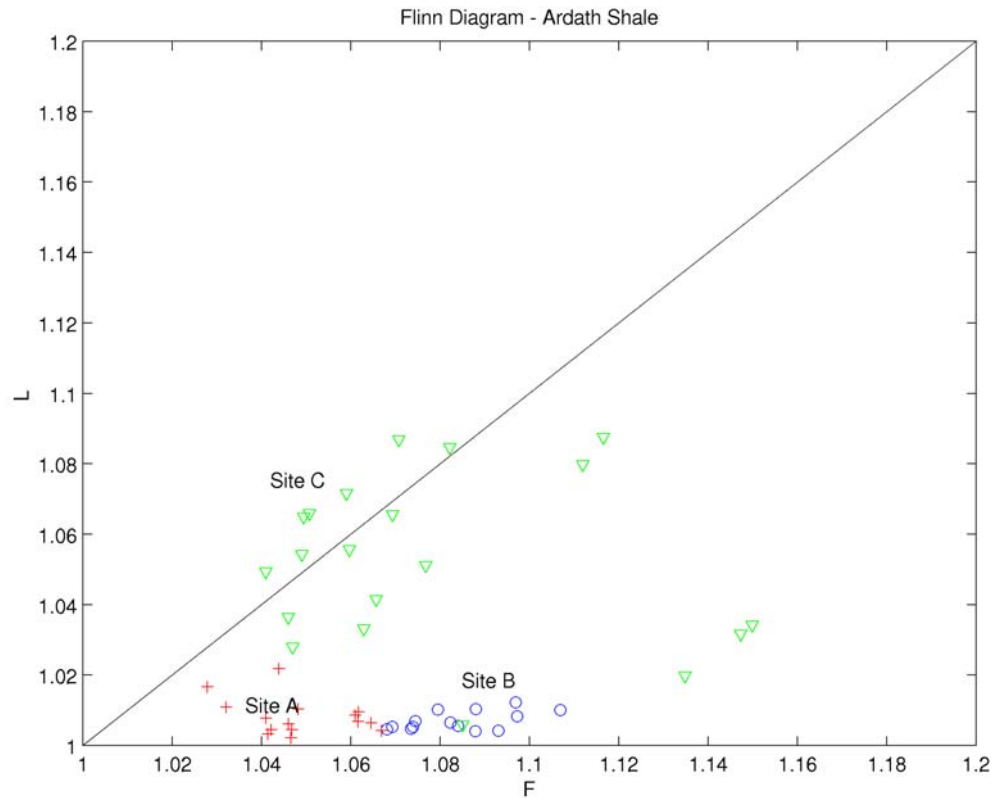
$$S_0 = \sum_N \delta_i^2.$$

The variance of the data set is

$$\sigma^2 = \frac{S_0}{n_f},$$

where n_f is the number of degrees of freedom, taken to be $N - 6$. In order to reduce the bias inherent in bootstrap procedures, we replace each of the $N \times 6$ tensor elements with new ones drawn from normal distributions with the mean of the original and the variance σ^2 estimated for the entire data set (for additional details see Tauxe, 1998). We then calculate the eigenparameters for each synthetic data set.

FLINN DIAGRAM



RAW AMS DATA

FORMAT:

Samplename azimuth plunge strike dip

15 samples following scheme:

Jelinek, V., The statistical theory of measuring anisotropy of magnetic susceptibility of rocks and its application: Brno, Geophysika, p. 1-88.

| | | | | | |
|----------|-----------|-----------|-----------|-----------|-----------|
| SiteB-a1 | 95.0 | -45.0 | 0.0 | 0.0 | |
| | 0.249E+03 | 0.253E+03 | 0.244E+03 | 0.249E+03 | 0.253E+03 |
| | 0.254E+03 | 0.254E+03 | 0.258E+03 | 0.254E+03 | 0.254E+03 |
| | 0.236E+03 | 0.256E+03 | 0.250E+03 | 0.236E+03 | 0.257E+03 |
| SiteB-a2 | 95.0 | -45.0 | 0.0 | 0.0 | |
| | 0.229E+03 | 0.232E+03 | 0.224E+03 | 0.228E+03 | 0.231E+03 |
| | 0.232E+03 | 0.232E+03 | 0.236E+03 | 0.232E+03 | 0.232E+03 |
| | 0.217E+03 | 0.234E+03 | 0.229E+03 | 0.217E+03 | 0.234E+03 |

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| SiteB-a3 | 95.0 | -45.0 | 0.0 | 0.0 | |
| | 0.235E+03 | 0.237E+03 | 0.229E+03 | 0.235E+03 | 0.237E+03 |
| | 0.238E+03 | 0.238E+03 | 0.242E+03 | 0.238E+03 | 0.238E+03 |
| | 0.223E+03 | 0.241E+03 | 0.234E+03 | 0.223E+03 | 0.241E+03 |
| SiteA-a1 | 35.0 | -64.0 | 0.0 | 0.0 | |
| | 0.206E+03 | 0.207E+03 | 0.202E+03 | 0.205E+03 | 0.207E+03 |
| | 0.210E+03 | 0.209E+03 | 0.211E+03 | 0.211E+03 | 0.209E+03 |
| | 0.208E+03 | 0.201E+03 | 0.209E+03 | 0.209E+03 | 0.201E+03 |
| SiteA-a2 | 35.0 | -64.0 | 0.0 | 0.0 | |
| | 0.215E+03 | 0.218E+03 | 0.212E+03 | 0.215E+03 | 0.217E+03 |
| | 0.219E+03 | 0.218E+03 | 0.220E+03 | 0.220E+03 | 0.218E+03 |
| | 0.211E+03 | 0.219E+03 | 0.219E+03 | 0.211E+03 | 0.218E+03 |
| SiteA-a3 | 35.0 | -64.0 | 0.0 | 0.0 | |
| | 0.188E+03 | 0.190E+03 | 0.186E+03 | 0.188E+03 | 0.190E+03 |
| | 0.192E+03 | 0.191E+03 | 0.192E+03 | 0.193E+03 | 0.191E+03 |
| | 0.185E+03 | 0.191E+03 | 0.190E+03 | 0.185E+03 | 0.191E+03 |
| SiteB-b1 | 105.0 | -39.0 | 0.0 | 0.0 | |
| | 0.242E+03 | 0.244E+03 | 0.238E+03 | 0.242E+03 | 0.243E+03 |
| | 0.242E+03 | 0.242E+03 | 0.246E+03 | 0.242E+03 | 0.242E+03 |
| | 0.230E+03 | 0.246E+03 | 0.238E+03 | 0.230E+03 | 0.246E+03 |
| SiteB-b2 | 105.0 | -39.0 | 0.0 | 0.0 | |
| | 0.230E+03 | 0.233E+03 | 0.228E+03 | 0.231E+03 | 0.233E+03 |
| | 0.232E+03 | 0.231E+03 | 0.235E+03 | 0.232E+03 | 0.231E+03 |
| | 0.220E+03 | 0.236E+03 | 0.227E+03 | 0.220E+03 | 0.236E+03 |
| SiteB-b3 | 105.0 | -39.0 | 0.0 | 0.0 | |
| | 0.254E+03 | 0.258E+03 | 0.249E+03 | 0.254E+03 | 0.257E+03 |
| | 0.256E+03 | 0.256E+03 | 0.262E+03 | 0.256E+03 | 0.256E+03 |
| | 0.236E+03 | 0.263E+03 | 0.251E+03 | 0.236E+03 | 0.263E+03 |
| SiteB-c1 | 90.0 | -51.0 | 0.0 | 0.0 | |
| | 0.262E+03 | 0.264E+03 | 0.254E+03 | 0.262E+03 | 0.264E+03 |
| | 0.268E+03 | 0.268E+03 | 0.271E+03 | 0.268E+03 | 0.268E+03 |
| | 0.250E+03 | 0.269E+03 | 0.265E+03 | 0.250E+03 | 0.270E+03 |
| SiteB-c2 | 90.0 | -51.0 | 0.0 | 0.0 | |
| | 0.276E+03 | 0.278E+03 | 0.268E+03 | 0.276E+03 | 0.277E+03 |
| | 0.281E+03 | 0.281E+03 | 0.284E+03 | 0.281E+03 | 0.281E+03 |
| | 0.262E+03 | 0.282E+03 | 0.278E+03 | 0.262E+03 | 0.282E+03 |
| SiteB-c3 | 90.0 | -51.0 | 0.0 | 0.0 | |
| | 0.236E+03 | 0.238E+03 | 0.231E+03 | 0.236E+03 | 0.237E+03 |
| | 0.240E+03 | 0.240E+03 | 0.243E+03 | 0.240E+03 | 0.240E+03 |
| | 0.226E+03 | 0.242E+03 | 0.237E+03 | 0.226E+03 | 0.241E+03 |
| SiteB-d1 | 93.0 | -49.0 | 0.0 | 0.0 | |
| | 0.261E+03 | 0.264E+03 | 0.254E+03 | 0.261E+03 | 0.264E+03 |
| | 0.268E+03 | 0.267E+03 | 0.271E+03 | 0.267E+03 | 0.266E+03 |
| | 0.248E+03 | 0.269E+03 | 0.264E+03 | 0.248E+03 | 0.269E+03 |
| SiteB-d2 | 93.0 | -49.0 | 0.0 | 0.0 | |
| | 0.234E+03 | 0.236E+03 | 0.229E+03 | 0.234E+03 | 0.236E+03 |

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| 0.238E+03 | 0.238E+03 | 0.241E+03 | 0.238E+03 | 0.238E+03 |
| 0.224E+03 | 0.239E+03 | 0.236E+03 | 0.224E+03 | 0.240E+03 |
| SiteB-d3 | 93.0 | -49.0 | 0.0 | 0.0 |
| 0.281E+03 | 0.289E+03 | 0.275E+03 | 0.282E+03 | 0.287E+03 |
| 0.290E+03 | 0.289E+03 | 0.294E+03 | 0.290E+03 | 0.288E+03 |
| 0.268E+03 | 0.292E+03 | 0.286E+03 | 0.268E+03 | 0.293E+03 |
| SiteB-e1 | 90.0 | -49.0 | 0.0 | 0.0 |
| 0.283E+03 | 0.288E+03 | 0.275E+03 | 0.283E+03 | 0.286E+03 |
| 0.291E+03 | 0.289E+03 | 0.295E+03 | 0.290E+03 | 0.289E+03 |
| 0.267E+03 | 0.292E+03 | 0.284E+03 | 0.267E+03 | 0.290E+03 |
| SiteB-e2 | 90.0 | -49.0 | 0.0 | 0.0 |
| 0.230E+03 | 0.233E+03 | 0.225E+03 | 0.231E+03 | 0.232E+03 |
| 0.235E+03 | 0.235E+03 | 0.238E+03 | 0.235E+03 | 0.235E+03 |
| 0.221E+03 | 0.236E+03 | 0.232E+03 | 0.221E+03 | 0.236E+03 |
| SiteC-a1 | 85.0 | -65.0 | 0.0 | 0.0 |
| 0.558E+03 | 0.565E+03 | 0.516E+03 | 0.556E+03 | 0.560E+03 |
| 0.586E+03 | 0.564E+03 | 0.606E+03 | 0.587E+03 | 0.560E+03 |
| 0.504E+03 | 0.556E+03 | 0.546E+03 | 0.505E+03 | 0.556E+03 |
| SiteC-a2 | 85.0 | -65.0 | 0.0 | 0.0 |
| 0.479E+03 | 0.494E+03 | 0.448E+03 | 0.482E+03 | 0.486E+03 |
| 0.512E+03 | 0.492E+03 | 0.524E+03 | 0.509E+03 | 0.491E+03 |
| 0.444E+03 | 0.483E+03 | 0.478E+03 | 0.444E+03 | 0.482E+03 |
| SiteC-a3 | 85.0 | -65.0 | 0.0 | 0.0 |
| 0.284E+03 | 0.290E+03 | 0.272E+03 | 0.286E+03 | 0.288E+03 |
| 0.298E+03 | 0.292E+03 | 0.304E+03 | 0.298E+03 | 0.291E+03 |
| 0.272E+03 | 0.286E+03 | 0.287E+03 | 0.272E+03 | 0.286E+03 |
| SiteC-a4 | 85.0 | -65.0 | 0.0 | 0.0 |
| 0.245E+03 | 0.248E+03 | 0.236E+03 | 0.246E+03 | 0.247E+03 |
| 0.254E+03 | 0.250E+03 | 0.257E+03 | 0.254E+03 | 0.250E+03 |
| 0.237E+03 | 0.246E+03 | 0.248E+03 | 0.237E+03 | 0.247E+03 |
| SiteC-b1 | 86.0 | -64.0 | 0.0 | 0.0 |
| 0.244E+03 | 0.246E+03 | 0.234E+03 | 0.244E+03 | 0.245E+03 |
| 0.248E+03 | 0.246E+03 | 0.254E+03 | 0.249E+03 | 0.246E+03 |
| 0.230E+03 | 0.244E+03 | 0.240E+03 | 0.230E+03 | 0.244E+03 |
| SiteC-b2 | 86.0 | -64.0 | 0.0 | 0.0 |
| 0.215E+03 | 0.216E+03 | 0.209E+03 | 0.215E+03 | 0.216E+03 |
| 0.219E+03 | 0.216E+03 | 0.222E+03 | 0.219E+03 | 0.217E+03 |
| 0.207E+03 | 0.215E+03 | 0.214E+03 | 0.207E+03 | 0.216E+03 |
| SiteC-b3 | 86.0 | -64.0 | 0.0 | 0.0 |
| 0.289E+03 | 0.294E+03 | 0.280E+03 | 0.290E+03 | 0.293E+03 |
| 0.299E+03 | 0.293E+03 | 0.303E+03 | 0.299E+03 | 0.293E+03 |
| 0.281E+03 | 0.287E+03 | 0.289E+03 | 0.280E+03 | 0.288E+03 |
| SiteC-b4 | 86.0 | -64.0 | 0.0 | 0.0 |
| 0.488E+03 | 0.496E+03 | 0.472E+03 | 0.489E+03 | 0.494E+03 |
| 0.508E+03 | 0.490E+03 | 0.514E+03 | 0.509E+03 | 0.490E+03 |
| 0.470E+03 | 0.488E+03 | 0.488E+03 | 0.470E+03 | 0.488E+03 |

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| SiteC-c1 | 85.0 | -69.0 | 0.0 | 0.0 | |
| | 0.240E+03 | 0.243E+03 | 0.233E+03 | 0.240E+03 | 0.243E+03 |
| | 0.246E+03 | 0.244E+03 | 0.250E+03 | 0.245E+03 | 0.244E+03 |
| | 0.232E+03 | 0.240E+03 | 0.240E+03 | 0.232E+03 | 0.240E+03 |
| SiteC-c2 | 85.0 | -69.0 | 0.0 | 0.0 | |
| | 0.414E+03 | 0.420E+03 | 0.394E+03 | 0.416E+03 | 0.416E+03 |
| | 0.426E+03 | 0.420E+03 | 0.438E+03 | 0.428E+03 | 0.420E+03 |
| | 0.396E+03 | 0.408E+03 | 0.410E+03 | 0.396E+03 | 0.409E+03 |
| SiteC-c3 | 85.0 | -69.0 | 0.0 | 0.0 | |
| | 0.591E+03 | 0.614E+03 | 0.566E+03 | 0.593E+03 | 0.608E+03 |
| | 0.623E+03 | 0.610E+03 | 0.636E+03 | 0.624E+03 | 0.609E+03 |
| | 0.570E+03 | 0.592E+03 | 0.596E+03 | 0.569E+03 | 0.592E+03 |
| SiteC-c4 | 85.0 | -69.0 | 0.0 | 0.0 | |
| | 0.976E+03 | 0.101E+04 | 0.944E+03 | 0.978E+03 | 0.101E+04 |
| | 0.102E+04 | 0.994E+03 | 0.104E+04 | 0.103E+04 | 0.996E+03 |
| | 0.946E+03 | 0.976E+03 | 0.980E+03 | 0.946E+03 | 0.972E+03 |
| SiteC-d1 | 81.0 | -74.0 | 0.0 | 0.0 | |
| | 0.284E+03 | 0.286E+03 | 0.269E+03 | 0.286E+03 | 0.284E+03 |
| | 0.293E+03 | 0.290E+03 | 0.300E+03 | 0.294E+03 | 0.288E+03 |
| | 0.272E+03 | 0.281E+03 | 0.283E+03 | 0.272E+03 | 0.282E+03 |
| SiteC-d2 | 81.0 | -74.0 | 0.0 | 0.0 | |
| | 0.176E+03 | 0.177E+03 | 0.169E+03 | 0.176E+03 | 0.177E+03 |
| | 0.184E+03 | 0.180E+03 | 0.192E+03 | 0.185E+03 | 0.178E+03 |
| | 0.170E+03 | 0.174E+03 | 0.178E+03 | 0.170E+03 | 0.173E+03 |
| SiteC-e1 | 81.0 | -73.0 | 0.0 | 0.0 | |
| | 0.373E+03 | 0.386E+03 | 0.354E+03 | 0.374E+03 | 0.386E+03 |
| | 0.390E+03 | 0.389E+03 | 0.406E+03 | 0.388E+03 | 0.388E+03 |
| | 0.356E+03 | 0.368E+03 | 0.374E+03 | 0.352E+03 | 0.370E+03 |
| SiteC-e2 | 81.0 | -73.0 | 0.0 | 0.0 | |
| | 0.329E+03 | 0.340E+03 | 0.308E+03 | 0.327E+03 | 0.342E+03 |
| | 0.346E+03 | 0.345E+03 | 0.359E+03 | 0.347E+03 | 0.344E+03 |
| | 0.316E+03 | 0.325E+03 | 0.331E+03 | 0.315E+03 | 0.325E+03 |
| SiteC-f1 | 86.0 | -59.0 | 0.0 | 0.0 | |
| | 0.389E+03 | 0.424E+03 | 0.385E+03 | 0.386E+03 | 0.424E+03 |
| | 0.430E+03 | 0.410E+03 | 0.428E+03 | 0.432E+03 | 0.412E+03 |
| | 0.380E+03 | 0.418E+03 | 0.410E+03 | 0.380E+03 | 0.418E+03 |
| SiteC-f2 | 86.0 | -59.0 | 0.0 | 0.0 | |
| | 0.298E+03 | 0.323E+03 | 0.297E+03 | 0.296E+03 | 0.327E+03 |
| | 0.326E+03 | 0.314E+03 | 0.323E+03 | 0.325E+03 | 0.315E+03 |
| | 0.294E+03 | 0.320E+03 | 0.318E+03 | 0.293E+03 | 0.320E+03 |
| SiteC-f3 | 86.0 | -59.0 | 0.0 | 0.0 | |
| | 0.211E+03 | 0.218E+03 | 0.207E+03 | 0.209E+03 | 0.218E+03 |
| | 0.219E+03 | 0.215E+03 | 0.219E+03 | 0.219E+03 | 0.216E+03 |
| | 0.205E+03 | 0.220E+03 | 0.217E+03 | 0.205E+03 | 0.220E+03 |
| SiteC-f4 | 86.0 | -59.0 | 0.0 | 0.0 | |
| | 0.384E+03 | 0.412E+03 | 0.384E+03 | 0.383E+03 | 0.413E+03 |

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| 0.418E+03 | 0.414E+03 | 0.416E+03 | 0.417E+03 | 0.414E+03 |
| 0.370E+03 | 0.423E+03 | 0.418E+03 | 0.370E+03 | 0.422E+03 |
| SiteA-b1 | 39.0 | -63.0 | 0.0 | 0.0 |
| 0.202E+03 | 0.202E+03 | 0.191E+03 | 0.204E+03 | 0.196E+03 |
| 0.205E+03 | 0.206E+03 | 0.207E+03 | 0.205E+03 | 0.207E+03 |
| 0.198E+03 | 0.205E+03 | 0.202E+03 | 0.199E+03 | 0.203E+03 |
| SiteA-b2 | 39.0 | -63.0 | 0.0 | 0.0 |
| 0.211E+03 | 0.207E+03 | 0.202E+03 | 0.208E+03 | 0.207E+03 |
| 0.210E+03 | 0.216E+03 | 0.210E+03 | 0.211E+03 | 0.216E+03 |
| 0.205E+03 | 0.210E+03 | 0.211E+03 | 0.205E+03 | 0.211E+03 |
| SiteA-c1 | 37.0 | -61.0 | 0.0 | 0.0 |
| 0.196E+03 | 0.195E+03 | 0.191E+03 | 0.195E+03 | 0.193E+03 |
| 0.197E+03 | 0.198E+03 | 0.198E+03 | 0.198E+03 | 0.199E+03 |
| 0.191E+03 | 0.197E+03 | 0.196E+03 | 0.191E+03 | 0.201E+03 |
| SiteA-c2 | 37.0 | -61.0 | 0.0 | 0.0 |
| 0.198E+03 | 0.196E+03 | 0.195E+03 | 0.195E+03 | 0.197E+03 |
| 0.197E+03 | 0.200E+03 | 0.200E+03 | 0.200E+03 | 0.200E+03 |
| 0.192E+03 | 0.200E+03 | 0.198E+03 | 0.192E+03 | 0.200E+03 |
| SiteA-c3 | 37.0 | -61.0 | 0.0 | 0.0 |
| 0.142E+03 | 0.141E+03 | 0.139E+03 | 0.141E+03 | 0.141E+03 |
| 0.142E+03 | 0.143E+03 | 0.144E+03 | 0.143E+03 | 0.143E+03 |
| 0.138E+03 | 0.143E+03 | 0.143E+03 | 0.138E+03 | 0.142E+03 |
| SiteA-d1 | 53.0 | -66.0 | 0.0 | 0.0 |
| 0.186E+03 | 0.184E+03 | 0.181E+03 | 0.185E+03 | 0.184E+03 |
| 0.188E+03 | 0.188E+03 | 0.191E+03 | 0.188E+03 | 0.188E+03 |
| 0.178E+03 | 0.187E+03 | 0.188E+03 | 0.179E+03 | 0.187E+03 |
| SiteA-d2 | 53.0 | -66.0 | 0.0 | 0.0 |
| 0.192E+03 | 0.181E+03 | 0.185E+03 | 0.193E+03 | 0.184E+03 |
| 0.191E+03 | 0.189E+03 | 0.191E+03 | 0.195E+03 | 0.189E+03 |
| 0.192E+03 | 0.185E+03 | 0.191E+03 | 0.191E+03 | 0.185E+03 |
| SiteA-d3 | 53.0 | -66.0 | 0.0 | 0.0 |
| 0.188E+03 | 0.180E+03 | 0.182E+03 | 0.189E+03 | 0.181E+03 |
| 0.190E+03 | 0.186E+03 | 0.187E+03 | 0.189E+03 | 0.186E+03 |
| 0.189E+03 | 0.182E+03 | 0.190E+03 | 0.188E+03 | 0.181E+03 |
| SiteA-e1 | 60.0 | -62.0 | 0.0 | 0.0 |
| 0.200E+03 | 0.204E+03 | 0.195E+03 | 0.199E+03 | 0.202E+03 |
| 0.206E+03 | 0.204E+03 | 0.205E+03 | 0.205E+03 | 0.206E+03 |
| 0.196E+03 | 0.203E+03 | 0.205E+03 | 0.193E+03 | 0.203E+03 |
| SiteA-e2 | 60.0 | -62.0 | 0.0 | 0.0 |
| 0.193E+03 | 0.197E+03 | 0.192E+03 | 0.194E+03 | 0.194E+03 |
| 0.200E+03 | 0.197E+03 | 0.198E+03 | 0.199E+03 | 0.197E+03 |
| 0.193E+03 | 0.195E+03 | 0.196E+03 | 0.194E+03 | 0.192E+03 |
| SiteA-e3 | 60.0 | -62.0 | 0.0 | 0.0 |
| 0.189E+03 | 0.192E+03 | 0.185E+03 | 0.188E+03 | 0.188E+03 |
| 0.192E+03 | 0.188E+03 | 0.191E+03 | 0.191E+03 | 0.189E+03 |
| 0.187E+03 | 0.191E+03 | 0.192E+03 | 0.184E+03 | 0.191E+03 |

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| SiteA-f2 | 77.0 | -54.0 | 0.0 | 0.0 | |
| 0.130E+03 | 0.129E+03 | 0.128E+03 | 0.128E+03 | 0.129E+03 | |
| 0.130E+03 | 0.130E+03 | 0.132E+03 | 0.131E+03 | 0.130E+03 | |
| 0.125E+03 | 0.131E+03 | 0.130E+03 | 0.125E+03 | 0.130E+03 | |