

Describing the uncertainty of earthquake focal mechanisms: *Supplementary Information*

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S1 Quaternions vs. rotation vectors

This section compares the how well rotation vector distribution matrices (RVDMs) fit synthetic, focal mechanism (FM) posterior probability distributions (PPDs) compared to a similar construction based on unit quaternions distributed on the $\mathbb{S}^3$ hypersphere; like the von Mises-Fisher (VMF) distribution but with greater freedom of distribution-shape on the hypersphere. The quaternion representation of rotation of angle θ about a unit vector (x, y, z) can be written:

$$\mathbf{q} = (q_0, q_x, q_y, q_z) = \left(\cos \frac{\theta}{2}, x \sin \frac{\theta}{2}, y \sin \frac{\theta}{2}, z \sin \frac{\theta}{2} \right). \quad (\text{S1})$$

We consider a 3D normal distribution for $\mathbf{q}_v = (q_x, q_y, q_z)$, and note that $\|\mathbf{q}_v\|_2 = \sin \frac{\theta}{2}$, such that at small angles this equates to the rotation vector system besides a factor of 2. For a given FM PPD, we can compute the unit quaternions $\mathbf{q}$ from the best-fit FM to each FM in the grid, and compute a covariance matrix from their vector components $\mathbf{q}_v$:

$$\mathbf{C}_{ij}^{\text{VMF}} = \sum_k^{N_{\text{grid}}} p_k \mathbf{q}_{v_k} \mathbf{q}_{v_k}^T. \quad (\text{S2})$$

This is directly analogous to our RVDM method (Eq. 2). The 3D normal assumption is a small-angle approximation because $\|\mathbf{q}_v\|_2$ is bounded ($\sin \frac{\theta}{2} \leq 1$), so extra care would be needed if generating random quaternions from $\mathbf{C}_{ij}^{\text{VMF}}$.

Figure S1 presents a comparison of RVDM and VMF fits to FM PPDs using methodology equivalent to Section 4.2 and Figure 4c. We find that across 5,000 synthetic FMs the ratio of PPD misfits $\epsilon_{\text{RVDM}}/\epsilon_{\text{VMF}}$ is generally very close to one; note that unlike Figure 4c, a logarithmic scale is unnecessary here. The median ratio does increase with overall uncertainty σ , from ~ 1.00 at $\sigma < 20^\circ$ to ~ 1.05 at $\sigma = 49^\circ$. The median-curve rises distinctly above one at $\sigma \sim 30^\circ$, which is near where we observed wrap-around effects to become prominent in the RVDM model in Section 3. The mean and median ratios from these 5,000 FMs are 1.013 and 1.003, respectively. Overall, the distributions of ϵ_{RVDM} and ϵ_{VMF} are extremely similar, so we opted to use the RVDM model for its conceptual simplicity.

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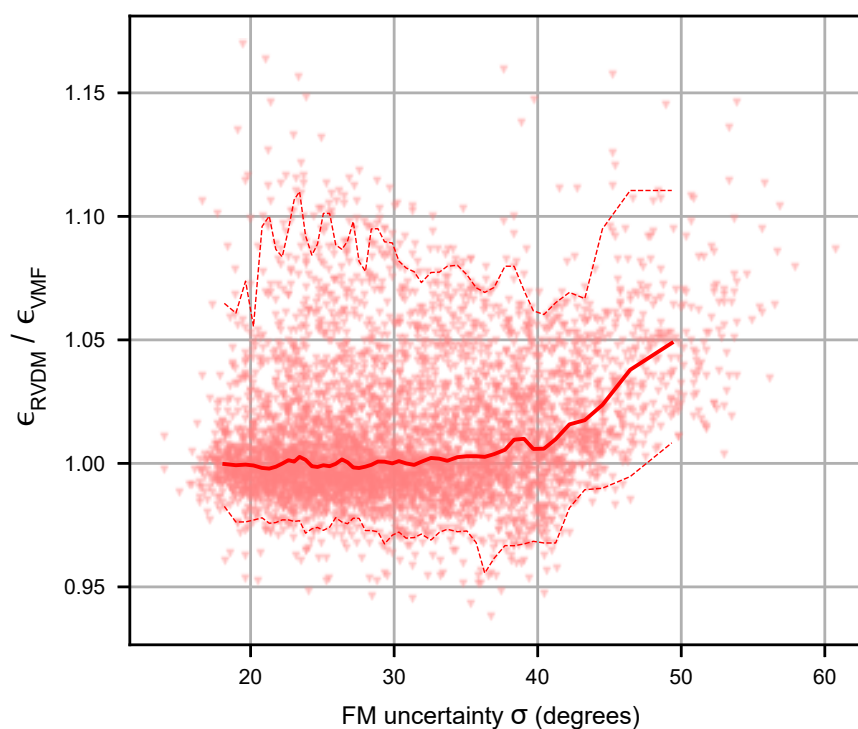


Figure S1 Ratios of PPD misfits $\epsilon_{\text{RVDM}} / \epsilon_{\text{VMF}}$ vs. overall uncertainty (σ) as measured from the RVDM, for 5,000 synthetic FMs, as in Figure 4c (following the overall methodology of Section 4.2). Solid lines indicate median values for a moving window of 200 FMs, with 50% overlap between windows; dashed lines indicate the corresponding 95% ranges.

S2 Focal mechanism and stress inversion methods

We present new Python codes for both FM estimation from P-wave first-motions and tectonic stress inversion. The codes are designed for convenience when working with catalogs and station inventories in standard QuakeML formats, as they would appear when downloaded from public repositories using ObsPy.

S2.1 Focal mechanism grid search method

Our FM estimation code is based on the Bayesian formulation of [Pugh et al. \(2016\)](#), which is equivalent to that of [Brillinger et al. \(1980\)](#) and [Walsh et al. \(2009\)](#). It performs a grid search of double-couple (DC) FMs. For each FM in the grid, N_{obs} first-motion data y_i are compared to predicted amplitudes A_{ijk} , which can range $[-1, 1]$, on the focal sphere to compute a posterior probability p_k :

$$p_k \propto \sum_{j=1}^{N_{\text{hyp}}} \prod_{i=1}^{N_{\text{obs}}} \frac{1}{2} (1 + \text{erf}(\frac{y_i A_{ijk}}{\sqrt{2}\sigma_i})) (1 - \omega) + \frac{1}{2} (1 + \text{erf}(-\frac{y_i A_{ijk}}{\sqrt{2}\sigma_i})) \omega. \quad (\text{S3})$$

Note that previous studies have interpreted the parameters σ_i and ω in different ways. We call σ_i a noise amplitude, expressed as a ratio of the first-motion amplitude (note that this is a new definition of σ vs. its use in the main text). As noise amplitude is often difficult to quantify, and our Python code takes ObsPy/QuakeML Pick objects as input, we assign a value based on the the phase onset label (impulsive or emergent); for this study we assign σ_i to 0.3 for arrivals labeled impulsive, or 0.6 for those labeled emergent (or unlabeled). Our code interprets ω as the probability that the vertical component of the seismogram is reversed, either due to a wiring issue within the instrument or a bug in preprocessing of the seismic data, which can often be set to something like 0.02. However, this feature was not used in this study and ω was set to 0.

If any form of uncertainty estimate on the hypocenter is provided, the code repeats the grid-search for N_{hyp} Monte Carlo realizations of the hypocenter and its corresponding takeoff angles. For each focal mechanism, we assigned horizontal and vertical hypocenter uncertainties of 1.0 and 2.0 km, respectively, representing 95% confidence intervals. The code involves raytracing through a 1D layered velocity model; however, uncertainties in the velocity model are not considered in the FM inversion since they trade-off with hypocentral uncertainties. No errors were introduced in the velocity model for the synthetic FM inversions in this study; the model used to create the synthetics was precisely that supplied to the FM inversion code.

One important feature of our code is that, rather than outputting the highest-probability grid-FM as the preferred model, we compute a centroid FM to the PPD. In practice, we do this by first taking a weighted-mean moment-tensor of all FMs in the grid (weighted by p_k) and extracting its best-fit DC. This initial best-fit FM estimate is then refined by computing a weighted-mean quaternion from it to all FMs in the grid ([Markley et al., 2007](#)), and applying the resulting rotation. Along with the best-fit FM, the code outputs a custom-class FM uncertainty object containing the RVDM and overall angular variance, as well as the full PPD.

S2.1.1 Considerations for synthetic first-motions

We assigned noise to the theoretical synthetic P focal-sphere amplitudes A_0 , which exist in the range $[-1, 1]$:

$$A_i = A_{0,i} + \mu_i \mathcal{N}(0, \sigma_{0,i}^2), \quad (\text{S4})$$

where $\mathcal{N}(0, \sigma^2)$ indicates a zero-mean normal distribution and $\sigma_{0,i}$ is assigned depending on A_0 . Absolute amplitudes $|A_0| \geq 0.25$ are labeled impulsive and assigned $\sigma_0 = 0.3$, amplitudes in the range $0 < |A_0| < 0.25$ are assigned $\sigma_0 = 0.6$. μ_i indicate mean absolute-value amplitudes for portions either the impulsive or emergent portions of the focal sphere, which for a cutoff of $|A_0| = 0.25$ are 0.60 and 0.11, respectively. Equation S4 attempts to achieve first-motion noise that is self-consistent with the assigned σ_i , with the severe limitation that we rely only on qualitative phase onset labels to assign σ_i .

S2.2 Stress inversion method

We implement a stress inversion routine in Python that builds upon the methods of [Vavryčuk \(2014\)](#), [Plourde and Nedimović \(2021\)](#), and [Plourde and Cassidy \(2022\)](#). Generally, the main input to the stress-inversion function is a list Obspy FocalMechanism objects, with extra customized fields to contain the RVDM, but alternatively a full PPD from a FM grid-search can be provided to be sampled directly. The method estimates a probability distribution of the stress tensor using Monte Carlo sampling of the FMs, i.e. it estimates stress for many random realizations of the input FMs drawn from their respective PPDs.

For each FM realization, the stress tensor is estimated with an iterative technique built upon the linear stress inversion method of [Michael \(1984\)](#). The code always includes two equations per FM, one for each nodal plane being the true fault plane, but if the FM has a preferred plane indicated its equation will be given full weight, and the auxiliary-plane equation will receive zero weight. Equations in the linear inversion are further weighted according

to their inverse angular variance (so an FM uncertainty description must be provided even if the full PPD is provided). The purpose of iterations is two-fold, i) to reweight the two equations of each FM based on which nodal plane is a better fit given the current stress estimate, ii) to rescale slip vectors according to their predicted lengths given the current stress estimate; this allows data to be fit precisely, e.g. for noise-free synthetic FMs we can recover the input stress-axis orientations to small fractions of a degree. However, for realistic scenarios where there are significant uncertainties in the FMs, we expect this will only marginally improve stress estimates.

By default, nodal planes are weighted based on both fault-instability I and slip-angle misfit criteria (Lund and Slunga, 1999). Specifically, we compute relative weights as

$$w = (1 - I(\mathbf{v}_{\text{pred}} \cdot \mathbf{v}_{\text{obs}}))^{-1}, \quad (\text{S5})$$

where $\mathbf{v}_{\text{pred}}$ and $\mathbf{v}_{\text{obs}}$ are the predicted and observed slip vectors, respectively. Weights of the two nodal planes are then normalized to sum to 1. Alternatively, the function can ignore fault stability and compute weights as $w = (1 - (\mathbf{v}_{\text{pred}} \cdot \mathbf{v}_{\text{obs}}))^{-1}$, or simply select the fault plane with higher I and assign it the full weight, similar to Vavryčuk (2014). We do not currently have an option to select the nodal-plane based on the slip-tendency metric (Chang, 2023), but it may be useful to include that option in future versions of the code.

S3 Supporting results for synthetic focal mechanism inversions

This section provides a cursory look at how the FM disorientation angle compares to the moment tensor matrix angle from Tape and Tape (2012, their Eq. 67), defined as:

$$\theta_M = \angle(\mathbf{M}_{ij}^a, \mathbf{M}_{ij}^b) = \cos^{-1} \left(\frac{\mathbf{M}_{ij}^a \cdot \mathbf{M}_{ij}^b}{\|\mathbf{M}_{ij}^a\| \|\mathbf{M}_{ij}^b\|} \right). \quad (\text{S6})$$

We compute the corresponding moment tensors for input and recovered FMs from Section 4.2 and compute the their θ_M misfit. Figure S2 presents a scatterplot of these matrix angles vs. the disorientation angles θ_K . We observe that the points concentrate closer to the curve tracking rotations about the P or T axes (mostly near the 1:1 line) than to the line tracking rotations about the N axis. This supports the assertion from Section 4.1 that rotational uncertainty about the N axis tends to be lower than about the P and T axes, and that this is naturally described by the RVDM.

This result relates to what Tape and Tape (2012) illustrate in their Figures 14 and 15, which is that θ_K is not always a good measure of the difference between two FM (double-couple) moment tensors. At $\theta_K = 90^\circ$ for rotation about the N axis, resulting in opposite FMs, θ_M reaches a maximum of 180° , whereas at 90° for rotations about the P or T axis, $\theta_M = 60^\circ$ because the radiation patterns remain relatively similar. These differences highlight that θ_M is a better scalar metric than θ_K for describing the overall similarity of two FMs, although this comes with the loss of a direct connection to the physical rotation angle. We are not aware of how the matrix angle concept might be extended to form a compact description of an FM PPD analogous to how rotation vectors (of scale θ_K) can construct the RVDM.

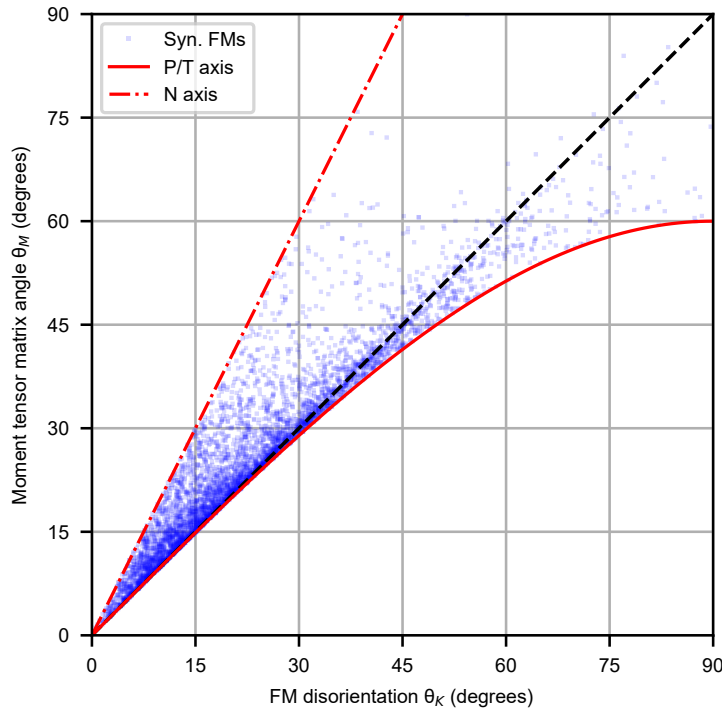


Figure S2 This scatterplot compares two measure of misfit between the input and recovered FMs for the 5,000 synthetic FM inversion from Section 4.2. The moment tensor matrix angle of Tape and Tape (2016) is compared to the disorientation (Kagan) angle ϵ used elsewhere in this study. As references, a solid red line tracks the two angular measures for rotations about the P or T axis of the FM, and a dashed red line tracks them for rotations about the N axis.

We also provide a comparison of FM misfit disorientation (Kagan) angles θ_K and their standard FM disorientation (uncertainty) angles σ . Red lines track the percentiles of θ_K that should be lower than σ assuming a 1D Gaussian model (68.3%) and an isotropic 3D Gaussian model (60.3%). These tracks fall mostly just below the 1:1 line, whereas ideally the 1:1 line would lie within these percentiles because the RVDM is 3D but generally not isotropic. This may suggest uncertainties are slightly over-reported relative to noise levels in the input data and that synthetic first-motions are correct slightly too frequently, but we consider them to fit reasonably closely. As described in Section 2.1.1, difficulty achieving this balance (or, more generally, selecting a noise amplitude σ_i) is a drawback of the (Pugh et al., 2016) Bayesian formulation (Eq. S3).

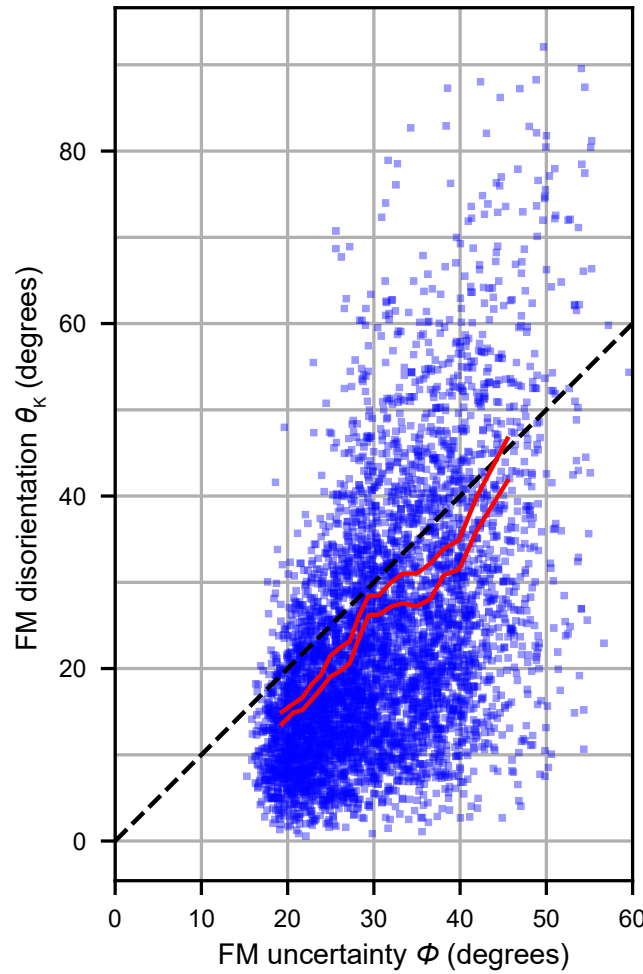


Figure S3 FM misfit disorientation (Kagan) angles θ_K vs. standard disorientation uncertainty σ for the 5,000 synthetic FM inversions in section 4.2. Red lines indicate the 60.8 and 68.3 percentiles of θ_K , measured in bins of 500 FMs with 50% overlap.

S4 Supporting results for synthetic stress inversions

Table S1 presents p -values measuring the statistical significance of differences of stress-uncertainty ϕ_τ distributions from synthetic stress-inversions with different FM-uncertainty models, from the distributions plotted in Figure 5.

Figure S4 presents misfit vs. uncertainty scatterplots for synthetic stress inversions, separated for the UNI, RVDM, and PPD FM uncertainty models. As uncertainties vary between the UNI, RVDM, and PPD datasets much more than misfits, the RVDM and PPD scatterplots are effectively compressed horizontally compared to the UNI plot. Both metrics are reported at the 95% confidence interval, and the solid black lines track the 95th percentile of ϵ_τ across 500-sample bins of ϕ_τ , which we should expect to be near the 1:1 line. We observe that it falls closest to the 1:1 line for the UNI dataset, whereas it sits above the 1:1 line for the RVDM and PPD datasets (i.e. they have more high misfits than expected, relative to the estimated uncertainty). The total percentages of $\epsilon_\tau > \phi_\tau$ for the UNI, RVDM, and PPD datasets are 6.9%, 13.1%, and 13.3% respectively.

In Figure S3 we found that uncertainties on synthetic FMs may be slightly overestimated, which would lead to overestimated ϕ_τ , opposite to the discrepancy we observe here. We cannot rule out that there may be an issue in the stress inversion algorithm that leads to underestimated ϕ_τ ; however, we hypothesize that the ϵ_τ distribution is outlier-prone due to binary nature of first-motion data and the potentially compounding effects of incorrect nodal plane selection. If we ignore this (potential) overall bias to lower uncertainties and compare the the three datasets, it could be interpreted that use of the UNI model overestimates uncertainty. We suggest that the UNI model must, in fact, contribute to overestimated ϕ_τ because it provides the stress inversion FMs that are not actually probable and, due to having a greater likelihood of rotation about the N-axis, are more likely to have opposing stress implications.

Figure S5a-c compares stress uncertainties ϕ_τ between inversions with equations weighted according to FM-uncertainty (using Eq. 6), and inversions omitting this weighting. We again examine the moving-median ratios with Brunner-Munzel tests, and find that in most UNI bins the unweighted case produces higher significantly higher ϕ_τ distributions, but that in the RVDM and PPD cases the unweighted case results in significantly lower ϕ_τ , with larger

differences at higher-overall ϕ_τ . We cannot fully explain these trends, but we will note that how Monte Carlo realizations from a high- σ UNI PPD model are more likely to produce FMs with opposing stress implications. If these high- σ FMs are not downweighted, they will contribute to high uncertainty in the stress tensor (through highly variable results across realizations). However, RVDM or full-PPD descriptions of FM-uncertainty typically have low rotational uncertainty about the N-axis, such that more of the FM-distribution is consistent with a single stress tensor. We speculate that, in this case, weighting FMs equally tends to result in under-estimated ϕ_τ because on any given realization, the set of FMs is effectively considered to be more informative than it actually is, and the extremities of the stress-PPD are less likely to be sampled.

Figure S5d–f present equivalent plots for ϵ_τ . We do not observe significant differences ϵ_τ distributions between the FM-weighted and unweighted datasets. Figure S5g–i directly compare differences D , computed equivalently to ϵ_τ , in the stress tensors derived from the FM-weighting and unweighted scenarios. Median D is near-zero for the lowest ϕ_τ , and it increases with ϕ_τ very similarly for each of the UNI (g), RVDM (h), and PPD (i) cases. We interpret this to suggest that the potential bias caused by omitting appropriate FM weights scales with uncertainty, i.e. omitting weights is more likely to cause large bias, in an absolute sense, when uncertainty is high.

Table S1 Brunner-Munzel test p -values for comparisons of ϕ_{τ}^{UNI} , $\phi_{\tau}^{\text{RVDM}}$, and ϕ_{τ}^{PPD} distributions, for each combination of N_{sta} and N_{FM} . p -values are computed assuming a two-sided t distribution. Low p -values (e.g. $\lesssim 0.05$) indicate a statistically-significant difference; note that in every case mean values $\overline{\phi_{\tau}^{\text{UNI}}} > \overline{\phi_{\tau}^{\text{RVDM}}} > \overline{\phi_{\tau}^{\text{PPD}}}$. Values are coloured by where they fall in 0- to ≥ 4 -standard-deviation confidence-levels expected for a normal distribution as a visual guide, but these distributions are not actually expected to be normal.

N_{sta}	N_{FM}	$p(\phi_{\tau}^{\text{UNI}} > \phi_{\tau}^{\text{PPD}})$	$p(\phi_{\tau}^{\text{UNI}} > \phi_{\tau}^{\text{RVDM}})$	$p(\phi_{\tau}^{\text{RVDM}} > \phi_{\tau}^{\text{PPD}})$
12	15	5.1E-25	6.1E-30	3.1E-01
12	20	1.1E-25	1.1E-31	2.8E-01
12	25	5.9E-18	1.4E-21	4.0E-01
12	30	3.2E-26	2.0E-28	6.0E-01
18	15	7.0E-11	6.2E-12	7.6E-01
18	20	5.8E-09	8.8E-10	6.9E-01
18	25	8.2E-09	4.6E-10	6.4E-01
18	30	6.7E-11	3.7E-13	4.6E-01
24	15	4.4E-05	1.2E-05	7.9E-01
24	20	2.9E-04	1.2E-04	8.0E-01
24	25	5.4E-04	1.4E-04	6.9E-01
24	30	1.5E-04	3.7E-05	7.0E-01
30	15	4.6E-03	2.2E-03	8.6E-01
30	20	4.4E-02	2.7E-02	8.5E-01
30	25	1.8E-02	1.0E-02	8.2E-01
30	30	8.3E-03	3.4E-03	7.7E-01
36	15	2.2E-02	1.6E-02	8.6E-01
36	20	4.2E-02	3.7E-02	9.3E-01
36	25	8.6E-02	7.3E-02	9.7E-01
36	30	8.9E-02	5.9E-02	8.0E-01

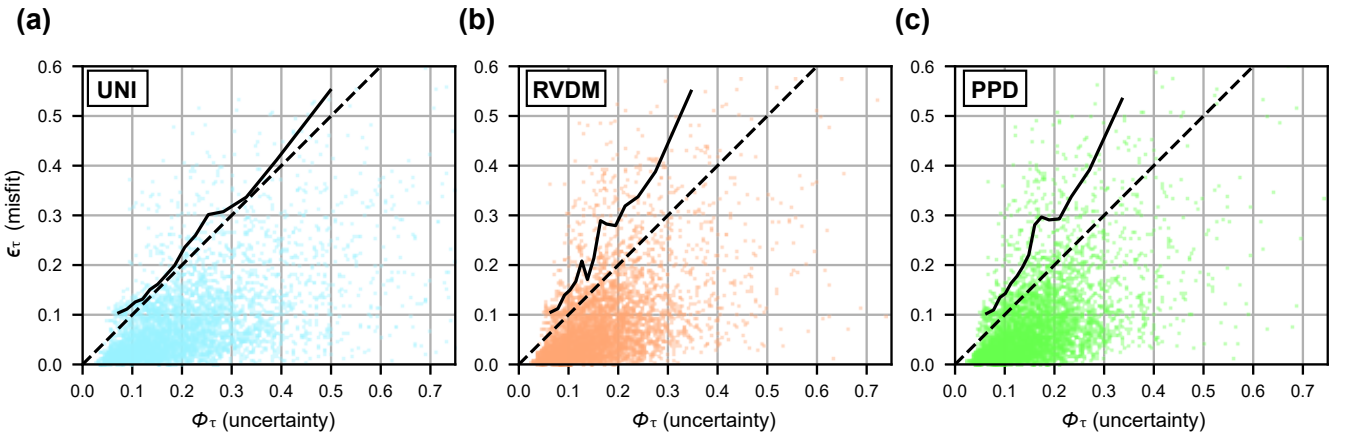


Figure S4 (a) ϵ_{τ} (misfit) vs. ϕ_{τ} (uncertainty) for the 4000 synthetic stress inversions provided UNI FM uncertainty models. ϕ_{τ} is reported at the 95% confidence interval. The solid black line indicates the 95th percentile of ϵ_{τ} in bins of 500 inversions, sorted by ϕ_{τ} with 50% overlap. (b,c) Like (a), but for inversion provided RVDM and PPD FM uncertainty models, respectively.

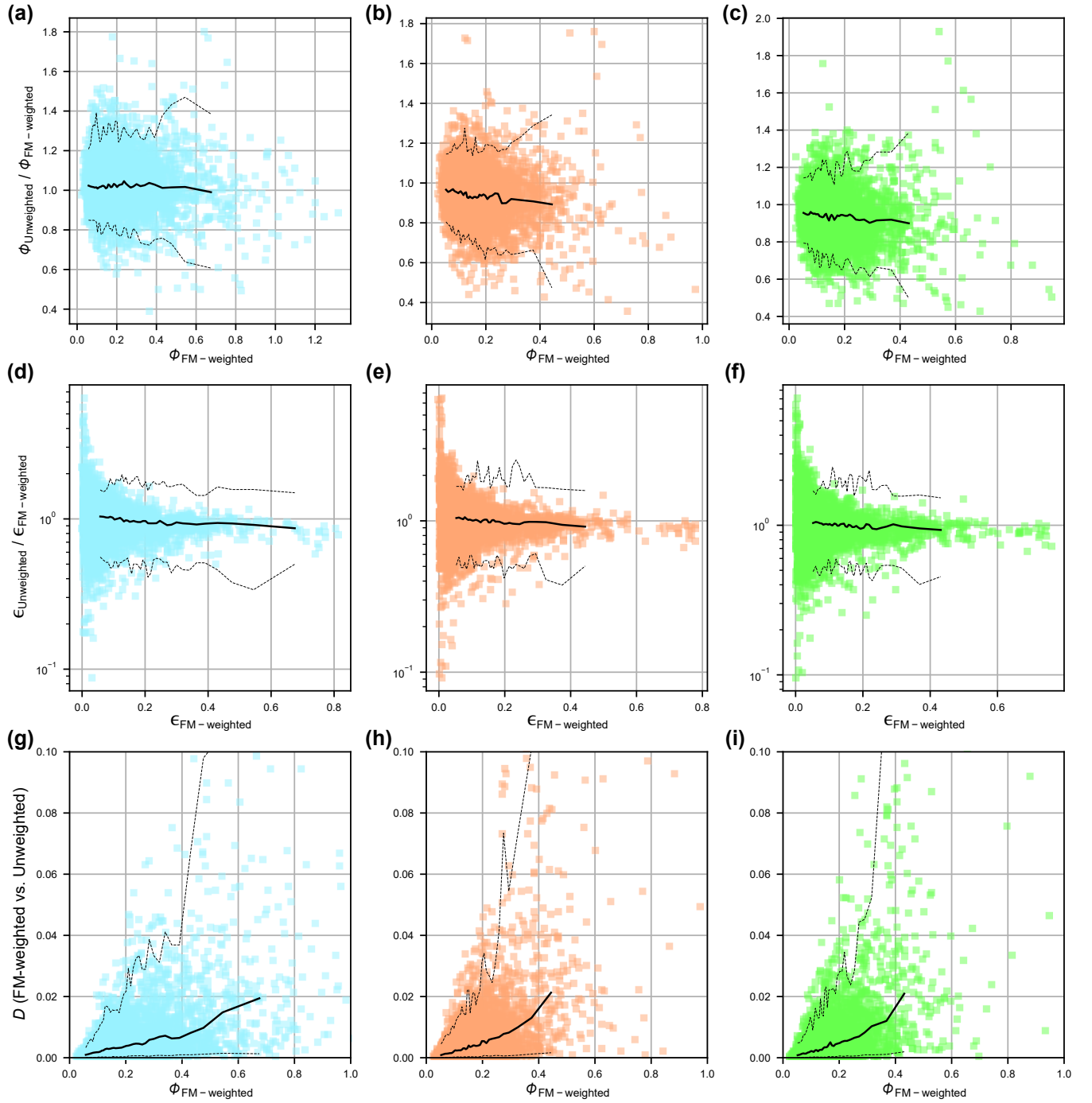
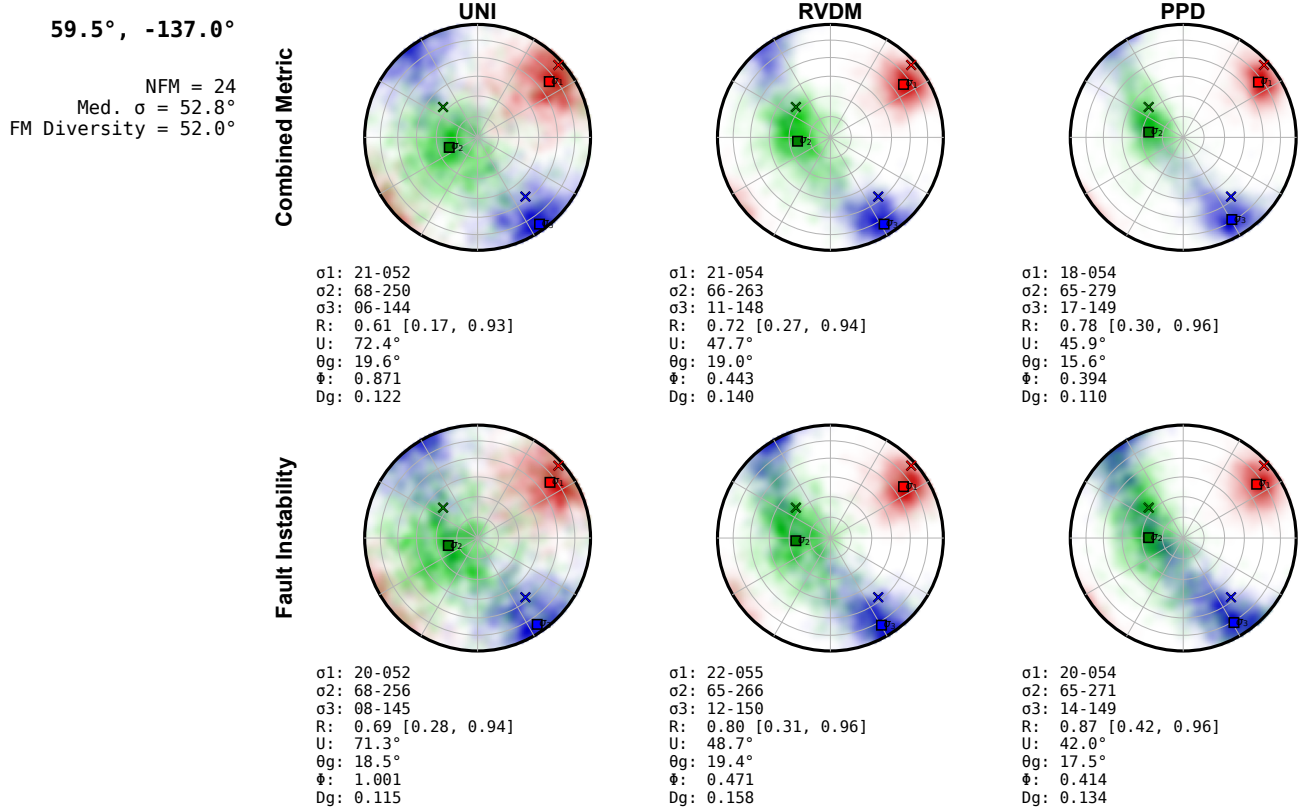


Figure S5 (a) Ratio of stress tensor uncertainties from inversions with equally-weighted FMs over those with FMs weighted according to their uncertainties, i.e. $\phi_{\text{unweighted}}/\phi_{\text{FM-weighted}}$, vs. the FM-weighted uncertainties $\phi_{\text{FM-weighted}}$, for the UNI FM uncertainty model. Solid lines indicate median ratios for a moving window of 200 inversions, with 50% overlap between windows; dashed lines indicate the corresponding 95% ranges. (b) As in (a), but for stress-inversions provided RVDM FM-uncertainty models. (c) As in (a), but for stress-inversions provided full FM PPDs. (d-f) As in (a-c), but comparing misfits ϵ_{τ} , rather than reported uncertainties. (g-i) Comparisons between the τ_{S} recovered with and without FM-weighting; this scalar metric D is computed just like ϵ_{τ} .

S5 Full Yakutat microplate stress results

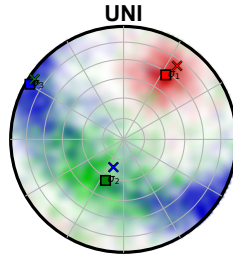
This section presents a complete set of stress-inversion results from the Yakutat microplate dataset, with 25 bins of 1° in latitude and 2° longitude meeting a minimum N_{FM} of 15. We omit formal figure numbers, but spatial bins are sorted by increasing latitude, and from east to west for each latitude bin. For each spatial bin, stress PPDs are presented for six inversion scenarios. Columns correspond to the form of FM PPD provided, either (left) UNI, (center) RVDM, or (right) the full PPD. Rows correspond to nodal-plane selection criteria, either (top) the combined fault-instability and slip-angle method of Eq. S5, or (bottom) only the maximum fault instability. The statistics reported for each bin and stress inversion are as in Figure 8, in Section 5 of the main text. Symbols X represent best-fit results from Gosselin et al. (2024).



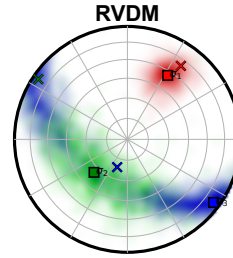
59.5°, -138.0°

NFM = 26
Med. σ = 53.1°
FM Diversity = 50.7°

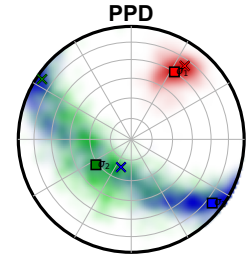
Combined Metric



σ_1 : 32-033
 σ_2 : 57-204
 σ_3 : 04-300
R: 0.80 [0.22, 0.95]
U: 66.6°
 θg : 27.4°
 Φ : 0.965
Dg: 0.094

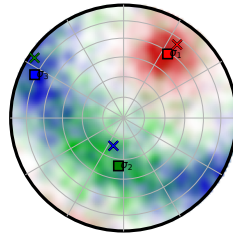


σ_1 : 33-032
 σ_2 : 56-225
 σ_3 : 06-126
R: 0.86 [0.41, 0.96]
U: 39.2°
 θg : 24.4°
 Φ : 0.313
Dg: 0.089

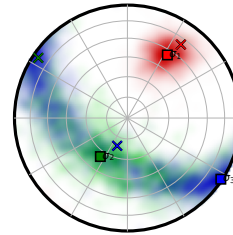


σ_1 : 30-033
 σ_2 : 58-234
 σ_3 : 10-128
R: 0.89 [0.42, 0.96]
U: 37.2°
 θg : 19.7°
 Φ : 0.279
Dg: 0.058

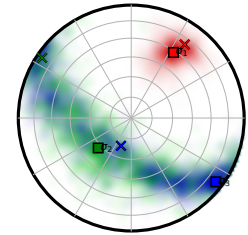
Fault Instability



σ_1 : 32-034
 σ_2 : 55-186
 σ_3 : 13-296
R: 0.83 [0.31, 0.96]
U: 63.4°
 θg : 23.6°
 Φ : 0.945
Dg: 0.081



σ_1 : 34-032
 σ_2 : 56-215
 σ_3 : 01-123
R: 0.91 [0.50, 0.97]
U: 36.9°
 θg : 23.9°
 Φ : 0.342
Dg: 0.088

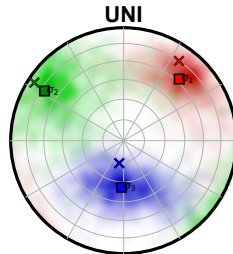


σ_1 : 32-033
 σ_2 : 58-228
 σ_3 : 07-127
R: 0.94 [0.54, 0.97]
U: 33.5°
 θg : 19.7°
 Φ : 0.332
Dg: 0.062

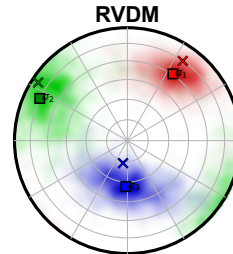
59.5°, -139.0°

NFM = 21
Med. σ = 50.6°
FM Diversity = 62.5°

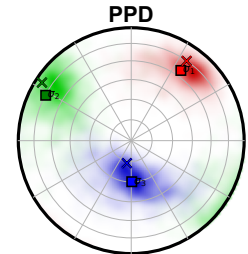
Combined Metric



σ_1 : 27-042
 σ_2 : 18-302
 σ_3 : 56-182
R: 0.52 [0.14, 0.94]
U: 65.4°
 θg : 15.4°
 Φ : 0.759
Dg: 0.198

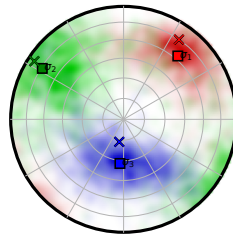


σ_1 : 29-034
 σ_2 : 15-296
 σ_3 : 57-182
R: 0.64 [0.19, 0.94]
U: 48.3°
 θg : 15.1°
 Φ : 0.490
Dg: 0.124

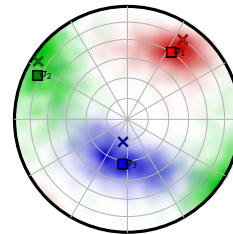


σ_1 : 25-035
 σ_2 : 15-298
 σ_3 : 60-179
R: 0.65 [0.25, 0.94]
U: 43.2°
 θg : 11.1°
 Φ : 0.509
Dg: 0.067

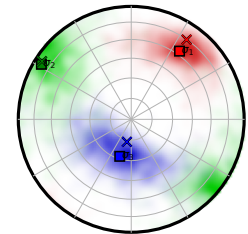
Fault Instability



σ_1 : 27-041
 σ_2 : 16-302
 σ_3 : 58-185
R: 0.62 [0.25, 0.94]
U: 68.8°
 θg : 14.0°
 Φ : 0.858
Dg: 0.135



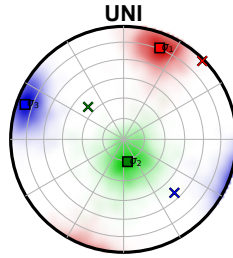
σ_1 : 30-033
 σ_2 : 12-296
 σ_3 : 57-186
R: 0.71 [0.28, 0.94]
U: 49.3°
 θg : 15.1°
 Φ : 0.592
Dg: 0.110



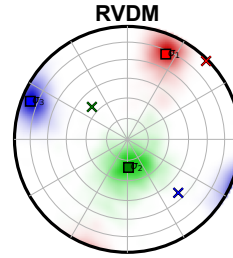
σ_1 : 27-035
 σ_2 : 07-301
 σ_3 : 62-197
R: 0.72 [0.33, 0.93]
U: 46.0°
 θg : 11.8°
 Φ : 0.555
Dg: 0.075

60.0°, -137.0°
 NFM = 20
 Med. σ = 51.3°
 FM Diversity = 47.8°

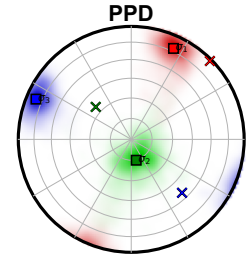
Combined Metric



σ_1 : 14-022
 σ_2 : 74-170
 σ_3 : 08-289
 R: 0.51 [0.13, 0.88]
 U: 35.2°
 θ_g : 33.2°
 Φ : 0.255
 Dg: 0.536

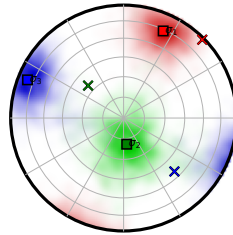


σ_1 : 18-024
 σ_2 : 70-178
 σ_3 : 08-291
 R: 0.52 [0.14, 0.90]
 U: 33.3°
 θ_g : 32.9°
 Φ : 0.221
 Dg: 0.495

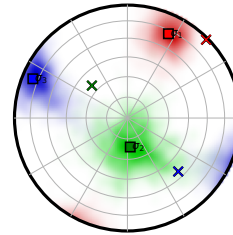


σ_1 : 12-025
 σ_2 : 75-167
 σ_3 : 09-293
 R: 0.48 [0.11, 0.88]
 U: 34.8°
 θ_g : 30.8°
 Φ : 0.187
 Dg: 0.465

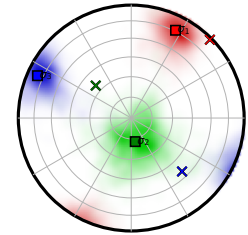
Fault Instability



σ_1 : 16-024
 σ_2 : 71-173
 σ_3 : 09-292
 R: 0.64 [0.26, 0.91]
 U: 41.4°
 θ_g : 30.7°
 Φ : 0.337
 Dg: 0.443



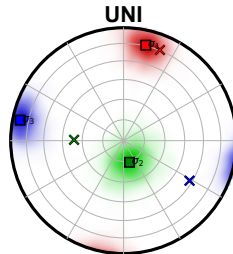
σ_1 : 18-026
 σ_2 : 69-174
 σ_3 : 10-293
 R: 0.65 [0.27, 0.92]
 U: 38.2°
 θ_g : 30.5°
 Φ : 0.231
 Dg: 0.419



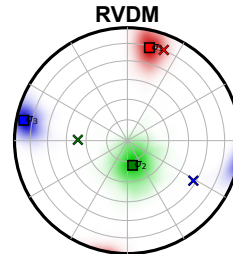
σ_1 : 14-027
 σ_2 : 73-170
 σ_3 : 10-294
 R: 0.61 [0.24, 0.91]
 U: 36.8°
 θ_g : 28.4°
 Φ : 0.227
 Dg: 0.387

60.0°, -138.0°
 NFM = 35
 Med. σ = 50.4°
 FM Diversity = 47.5°

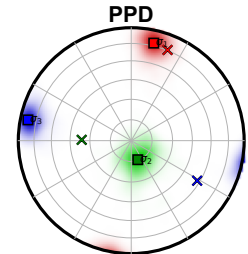
Combined Metric



σ_1 : 14-013
 σ_2 : 74-165
 σ_3 : 07-281
 R: 0.53 [0.24, 0.82]
 U: 25.0°
 θ_g : 18.4°
 Φ : 0.130
 Dg: 0.102

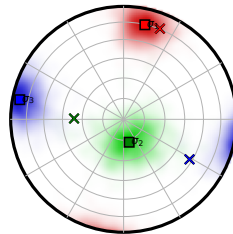


σ_1 : 17-013
 σ_2 : 72-168
 σ_3 : 07-281
 R: 0.57 [0.27, 0.85]
 U: 22.5°
 θ_g : 17.7°
 Φ : 0.107
 Dg: 0.089

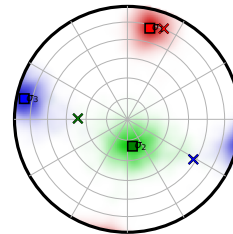


σ_1 : 12-013
 σ_2 : 76-161
 σ_3 : 07-281
 R: 0.57 [0.29, 0.88]
 U: 21.3°
 θ_g : 18.1°
 Φ : 0.098
 Dg: 0.096

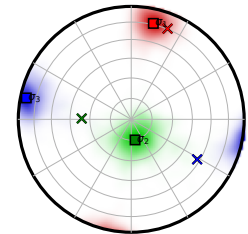
Fault Instability



σ_1 : 15-013
 σ_2 : 73-166
 σ_3 : 07-281
 R: 0.67 [0.35, 0.91]
 U: 29.4°
 θ_g : 16.3°
 Φ : 0.197
 Dg: 0.071



σ_1 : 18-014
 σ_2 : 70-169
 σ_3 : 08-281
 R: 0.69 [0.37, 0.93]
 U: 28.6°
 θ_g : 15.6°
 Φ : 0.143
 Dg: 0.059

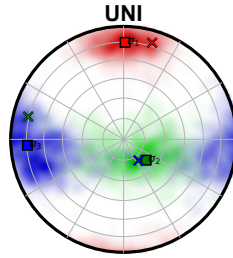


σ_1 : 14-013
 σ_2 : 75-169
 σ_3 : 06-282
 R: 0.68 [0.39, 0.92]
 U: 25.9°
 θ_g : 15.6°
 Φ : 0.131
 Dg: 0.067

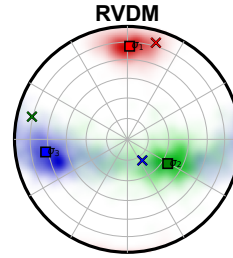
60.0°, -139.0°

NFM = 38
Med. σ = 49.2°
FM Diversity = 54.4°

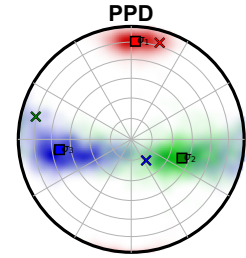
Combined Metric



σ_1 : 15-001
 σ_2 : 68-133
 σ_3 : 16-267
R: 0.81 [0.34, 0.95]
U: 43.1°
 θg : 27.2°
 ϕ : 0.343
Dg: 0.105

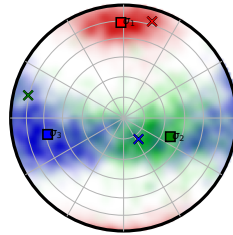


σ_1 : 19-001
 σ_2 : 56-121
 σ_3 : 28-261
R: 0.84 [0.43, 0.96]
U: 37.2°
 θg : 24.6°
 ϕ : 0.195
Dg: 0.100

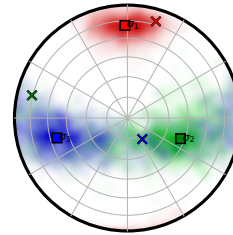


σ_1 : 14-002
 σ_2 : 50-110
 σ_3 : 36-262
R: 0.86 [0.49, 0.97]
U: 35.1°
 θg : 21.1°
 ϕ : 0.150
Dg: 0.079

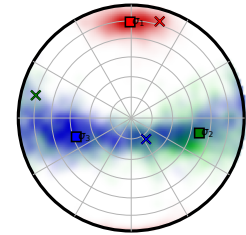
Fault Instability



σ_1 : 16-358
 σ_2 : 53-112
 σ_3 : 32-258
R: 0.88 [0.45, 0.96]
U: 45.5°
 θg : 24.7°
 ϕ : 0.438
Dg: 0.114



σ_1 : 19-358
 σ_2 : 48-111
 σ_3 : 35-254
R: 0.91 [0.49, 0.97]
U: 37.3°
 θg : 24.1°
 ϕ : 0.274
Dg: 0.115

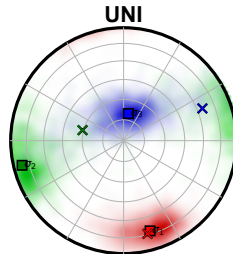


σ_1 : 16-359
 σ_2 : 38-102
 σ_3 : 47-251
R: 0.93 [0.55, 0.96]
U: 34.2°
 θg : 20.7°
 ϕ : 0.245
Dg: 0.094

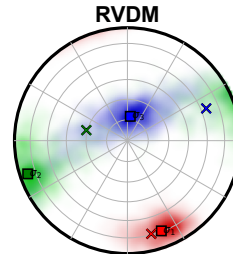
60.0°, -140.0°

NFM = 37
Med. σ = 44.8°
FM Diversity = 54.5°

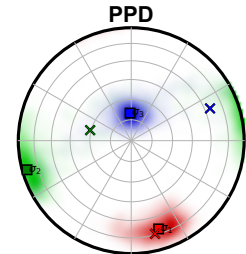
Combined Metric



σ_1 : 18-164
 σ_2 : 08-256
 σ_3 : 70-010
R: 0.73 [0.35, 0.95]
U: 48.6°
 θg : 12.3°
 ϕ : 0.364
Dg: 0.042

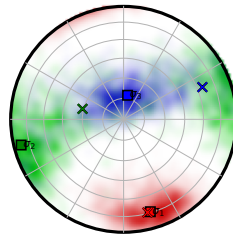


σ_1 : 16-159
 σ_2 : 08-252
 σ_3 : 72-007
R: 0.79 [0.44, 0.96]
U: 41.3°
 θg : 13.8°
 ϕ : 0.239
Dg: 0.040

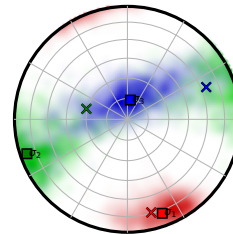


σ_1 : 19-163
 σ_2 : 05-254
 σ_3 : 70-358
R: 0.71 [0.36, 0.95]
U: 47.5°
 θg : 14.8°
 ϕ : 0.227
Dg: 0.057

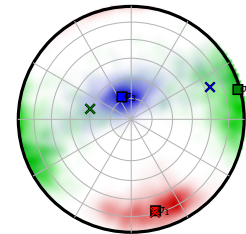
Fault Instability



σ_1 : 16-164
 σ_2 : 07-256
 σ_3 : 72-009
R: 0.84 [0.50, 0.96]
U: 45.6°
 θg : 8.7°
 ϕ : 0.454
Dg: 0.015



σ_1 : 12-160
 σ_2 : 07-251
 σ_3 : 76-009
R: 0.86 [0.57, 0.96]
U: 40.0°
 θg : 12.8°
 ϕ : 0.303
Dg: 0.027

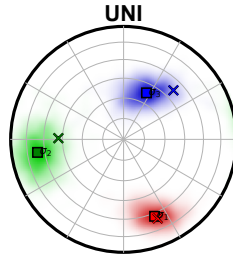


σ_1 : 17-165
 σ_2 : 02-074
 σ_3 : 73-338
R: 0.77 [0.49, 0.96]
U: 45.1°
 θg : 12.0°
 ϕ : 0.347
Dg: 0.031

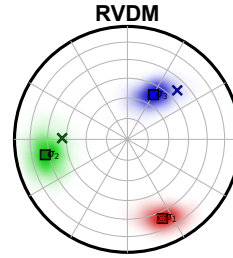
60.0°, -141.0°

NFM = 31
Med. σ = 44.3°
FM Diversity = 38.2°

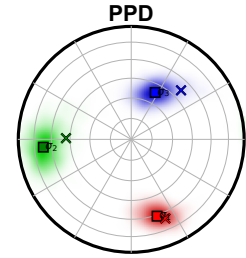
Combined Metric



σ_1 : 27-158
 σ_2 : 24-261
 σ_3 : 52-026
R: 0.67 [0.41, 0.90]
U: 23.5°
 θg : 7.2°
 Φ : 0.194
Dg: 0.031

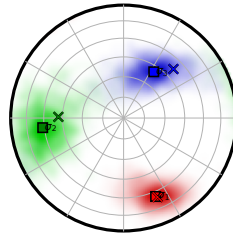


σ_1 : 24-156
 σ_2 : 27-259
 σ_3 : 52-030
R: 0.69 [0.49, 0.88]
U: 20.2°
 θg : 4.9°
 Φ : 0.137
Dg: 0.019

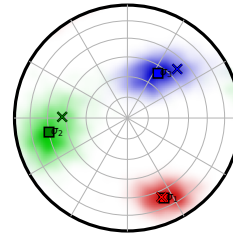


σ_1 : 29-161
 σ_2 : 23-265
 σ_3 : 52-027
R: 0.70 [0.49, 0.87]
U: 19.5°
 θg : 9.1°
 Φ : 0.121
Dg: 0.029

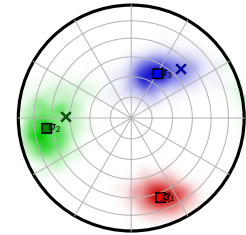
Fault Instability



σ_1 : 26-158
 σ_2 : 29-263
 σ_3 : 50-033
R: 0.75 [0.45, 0.94]
U: 32.2°
 θg : 4.3°
 Φ : 0.246
Dg: 0.008



σ_1 : 23-155
 σ_2 : 30-260
 σ_3 : 50-034
R: 0.75 [0.50, 0.93]
U: 26.2°
 θg : 4.7°
 Φ : 0.213
Dg: 0.008

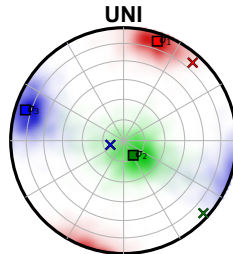


σ_1 : 26-160
 σ_2 : 26-263
 σ_3 : 52-031
R: 0.75 [0.50, 0.92]
U: 26.6°
 θg : 6.0°
 Φ : 0.208
Dg: 0.010

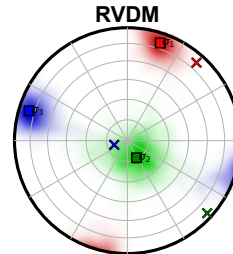
60.5°, -137.0°

NFM = 23
Med. σ = 52.1°
FM Diversity = 51.5°

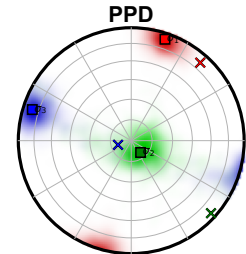
Combined Metric



σ_1 : 08-019
 σ_2 : 77-147
 σ_3 : 10-287
R: 0.69 [0.27, 0.95]
U: 38.7°
 θg : 31.7°
 Φ : 0.308
Dg: 0.383

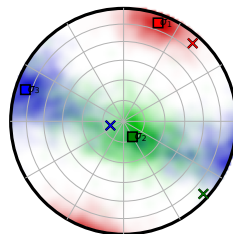


σ_1 : 10-019
 σ_2 : 76-152
 σ_3 : 10-287
R: 0.66 [0.28, 0.94]
U: 32.0°
 θg : 32.5°
 Φ : 0.174
Dg: 0.395

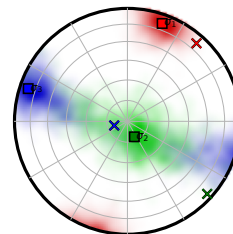


σ_1 : 06-018
 σ_2 : 79-142
 σ_3 : 09-287
R: 0.70 [0.32, 0.95]
U: 43.8°
 θg : 32.0°
 Φ : 0.160
Dg: 0.391

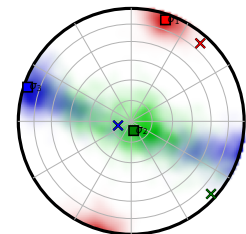
Fault Instability



σ_1 : 08-019
 σ_2 : 77-150
 σ_3 : 10-288
R: 0.85 [0.43, 0.96]
U: 43.1°
 θg : 27.3°
 Φ : 0.391
Dg: 0.332



σ_1 : 09-020
 σ_2 : 78-156
 σ_3 : 08-288
R: 0.82 [0.46, 0.95]
U: 38.1°
 θg : 27.9°
 Φ : 0.221
Dg: 0.333

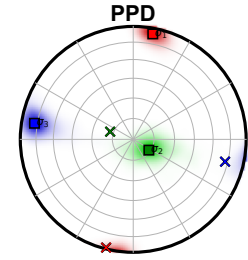
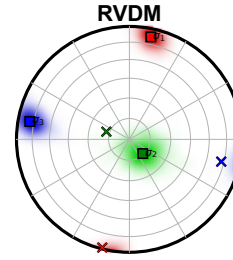
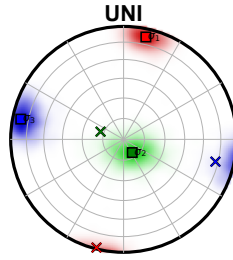


σ_1 : 06-019
 σ_2 : 83-165
 σ_3 : 04-288
R: 0.82 [0.45, 0.95]
U: 38.2°
 θg : 29.3°
 Φ : 0.205
Dg: 0.357

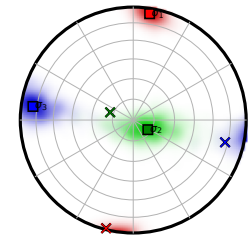
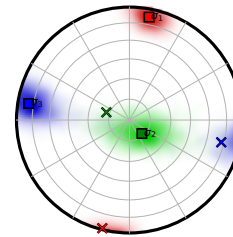
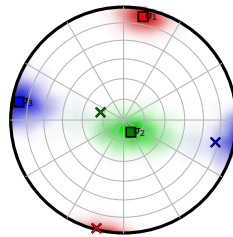
60.5°, -138.0°

NFM = 56
Med. σ = 47.1°
FM Diversity = 45.3°

Combined Metric



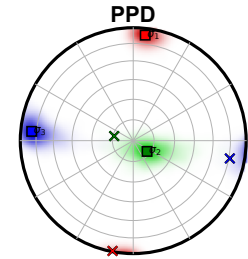
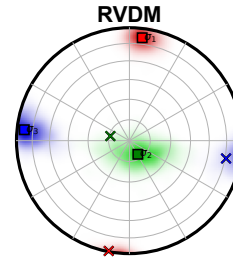
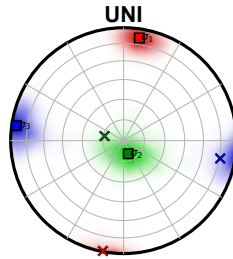
Fault Instability



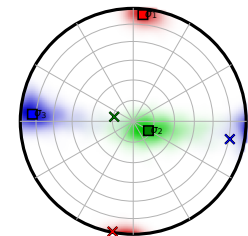
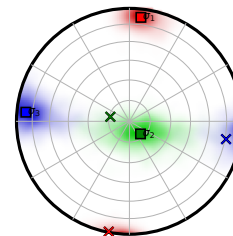
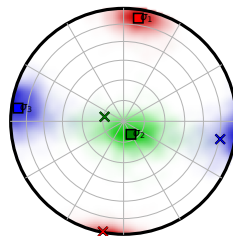
60.5°, -139.0°

NFM = 54
Med. σ = 46.2°
FM Diversity = 45.7°

Combined Metric



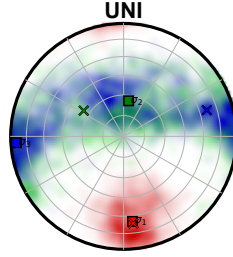
Fault Instability



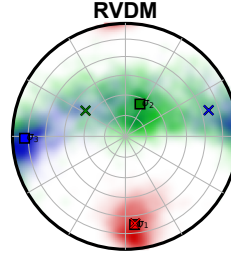
60.5°, -140.0°

NFM = 31
Med. σ = 44.3°
FM Diversity = 57.3°

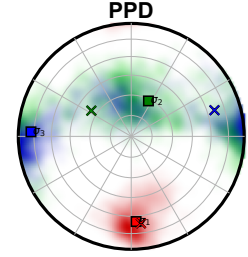
Combined Metric



σ_1 : 25-174
 σ_2 : 64-008
 σ_3 : 06-267
R: 0.95 [0.31, 0.96]
U: 39.5°
 θg : 4.6°
 Φ : 0.493
Dg: 0.005

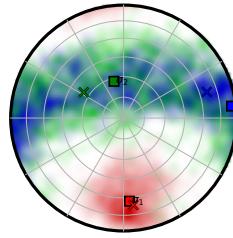


σ_1 : 23-174
 σ_2 : 64-024
 σ_3 : 12-269
R: 0.87 [0.43, 0.97]
U: 40.8°
 θg : 6.1°
 Φ : 0.314
Dg: 0.008

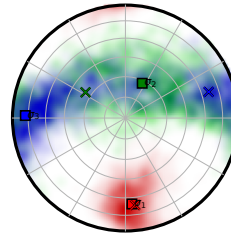


σ_1 : 25-177
 σ_2 : 61-026
 σ_3 : 12-273
R: 0.92 [0.43, 0.96]
U: 37.8°
 θg : 7.5°
 Φ : 0.326
Dg: 0.009

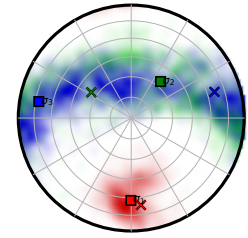
Fault Instability



σ_1 : 27-176
 σ_2 : 63-345
 σ_3 : 04-084
R: 0.94 [0.47, 0.97]
U: 43.7°
 θg : 5.9°
 Φ : 0.500
Dg: 0.008



σ_1 : 25-176
 σ_2 : 62-026
 σ_3 : 12-271
R: 0.90 [0.56, 0.96]
U: 42.9°
 θg : 6.8°
 Φ : 0.366
Dg: 0.008

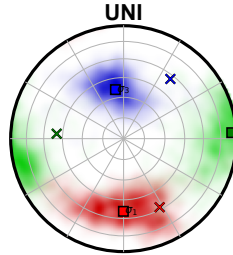


σ_1 : 28-180
 σ_2 : 56-039
 σ_3 : 18-280
R: 0.95 [0.55, 0.97]
U: 37.5°
 θg : 11.2°
 Φ : 0.360
Dg: 0.022

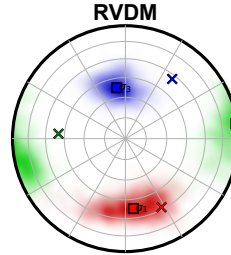
60.5°, -141.0°

NFM = 25
Med. σ = 39.8°
FM Diversity = 43.8°

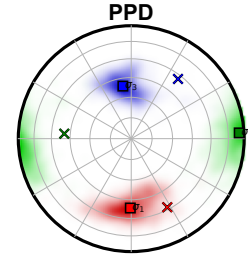
Combined Metric



σ_1 : 36-180
 σ_2 : 05-087
 σ_3 : 54-351
R: 0.52 [0.16, 0.90]
U: 45.9°
 θg : 28.2°
 Φ : 0.536
Dg: 0.246

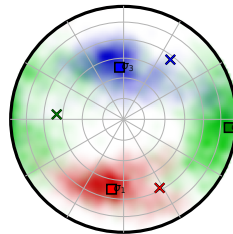


σ_1 : 38-173
 σ_2 : 01-082
 σ_3 : 52-350
R: 0.51 [0.19, 0.86]
U: 32.5°
 θg : 24.6°
 Φ : 0.345
Dg: 0.210

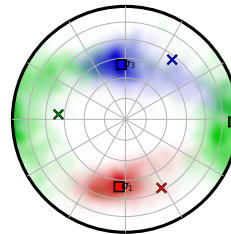


σ_1 : 39-181
 σ_2 : 05-087
 σ_3 : 51-351
R: 0.56 [0.24, 0.90]
U: 28.3°
 θg : 28.1°
 Φ : 0.286
Dg: 0.247

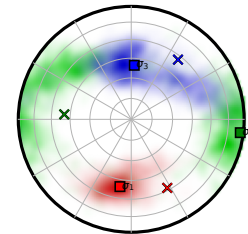
Fault Instability



σ_1 : 37-190
 σ_2 : 07-094
 σ_3 : 52-356
R: 0.66 [0.28, 0.94]
U: 60.0°
 θg : 32.2°
 Φ : 0.637
Dg: 0.317



σ_1 : 40-185
 σ_2 : 05-091
 σ_3 : 50-356
R: 0.68 [0.28, 0.94]
U: 56.9°
 θg : 29.4°
 Φ : 0.543
Dg: 0.266

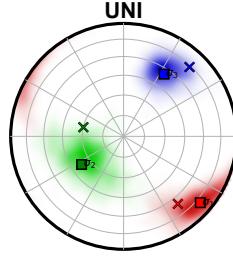


σ_1 : 39-190
 σ_2 : 03-097
 σ_3 : 50-003
R: 0.75 [0.35, 0.94]
U: 46.7°
 θg : 30.9°
 Φ : 0.485
Dg: 0.307

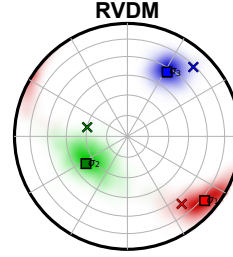
60.5°, -143.0°

NFM = 15
Med. σ = 25.0°
FM Diversity = 49.2°

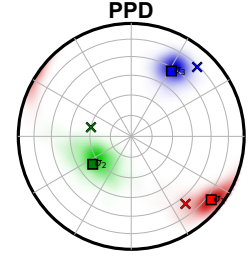
Combined Metric



σ_1 : 11-131
 σ_2 : 53-236
 σ_3 : 35-033
R: 0.60 [0.21, 0.90]
U: 31.2°
 θg : 17.8°
 Φ : 0.371
Dg: 0.142

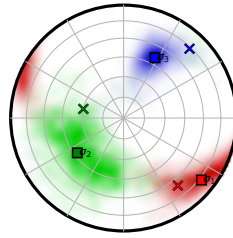


σ_1 : 12-130
 σ_2 : 54-237
 σ_3 : 34-032
R: 0.57 [0.26, 0.84]
U: 28.1°
 θg : 17.7°
 Φ : 0.291
Dg: 0.160

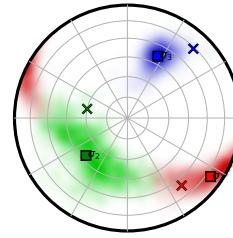


σ_1 : 11-128
 σ_2 : 55-234
 σ_3 : 33-032
R: 0.59 [0.27, 0.85]
U: 27.6°
 θg : 18.7°
 Φ : 0.302
Dg: 0.181

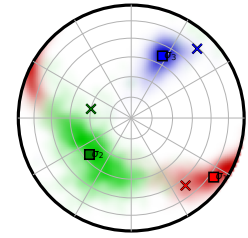
Fault Instability



σ_1 : 13-129
 σ_2 : 47-233
 σ_3 : 40-028
R: 0.57 [0.25, 0.92]
U: 45.1°
 θg : 20.3°
 Φ : 0.498
Dg: 0.189



σ_1 : 11-125
 σ_2 : 49-228
 σ_3 : 39-026
R: 0.52 [0.23, 0.90]
U: 38.8°
 θg : 22.9°
 Φ : 0.425
Dg: 0.260

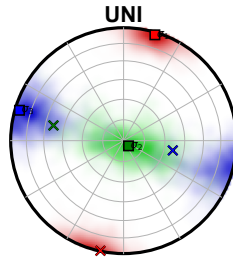


σ_1 : 11-126
 σ_2 : 49-229
 σ_3 : 38-027
R: 0.53 [0.23, 0.90]
U: 42.9°
 θg : 22.3°
 Φ : 0.441
Dg: 0.248

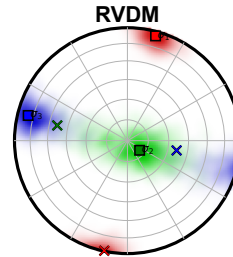
61.0°, -138.0°

NFM = 37
Med. σ = 46.0°
FM Diversity = 47.2°

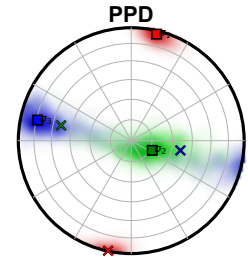
Combined Metric



σ_1 : 03-016
 σ_2 : 85-137
 σ_3 : 04-286
R: 0.80 [0.43, 0.97]
U: 38.2°
 θg : 14.4°
 Φ : 0.252
Dg: 0.028

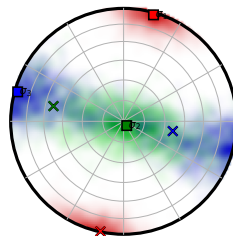


σ_1 : 04-015
 σ_2 : 79-128
 σ_3 : 10-284
R: 0.81 [0.53, 0.96]
U: 29.4°
 θg : 15.3°
 Φ : 0.127
Dg: 0.030

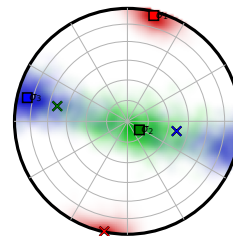


σ_1 : 03-013
 σ_2 : 73-115
 σ_3 : 16-282
R: 0.84 [0.51, 0.97]
U: 33.2°
 θg : 13.9°
 Φ : 0.101
Dg: 0.024

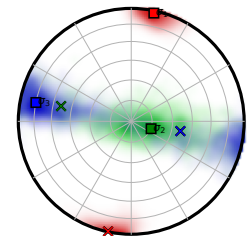
Fault Instability



σ_1 : 02-016
 σ_2 : 86-144
 σ_3 : 03-286
R: 0.93 [0.57, 0.97]
U: 35.3°
 θg : 10.2°
 Φ : 0.328
Dg: 0.015



σ_1 : 04-014
 σ_2 : 79-126
 σ_3 : 10-283
R: 0.89 [0.63, 0.98]
U: 33.0°
 θg : 12.0°
 Φ : 0.167
Dg: 0.019

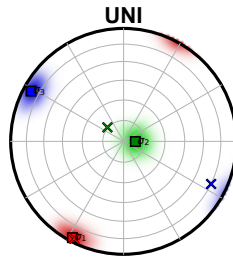


σ_1 : 02-012
 σ_2 : 75-110
 σ_3 : 15-281
R: 0.91 [0.64, 0.97]
U: 31.0°
 θg : 10.2°
 Φ : 0.142
Dg: 0.014

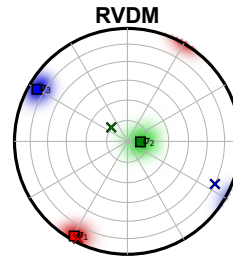
61.0°, -139.0°

NFM = 50
Med. σ = 45.4°
FM Diversity = 42.7°

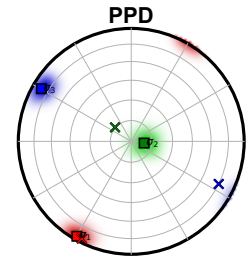
Combined Metric



σ_1 : 04-208
 σ_2 : 82-091
 σ_3 : 07-299
R: 0.61 [0.38, 0.82]
U: 16.2°
 θg : 7.6°
 Φ : 0.115
Dg: 0.028

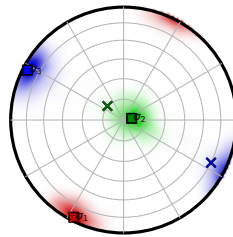


σ_1 : 04-209
 σ_2 : 81-092
 σ_3 : 08-300
R: 0.63 [0.42, 0.83]
U: 15.4°
 θg : 8.7°
 Φ : 0.083
Dg: 0.030

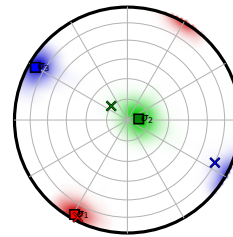


σ_1 : 04-210
 σ_2 : 81-098
 σ_3 : 09-300
R: 0.64 [0.39, 0.85]
U: 13.5°
 θg : 9.0°
 Φ : 0.080
Dg: 0.031

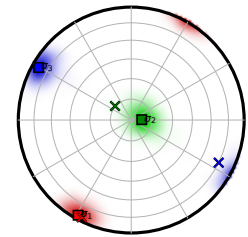
Fault Instability



σ_1 : 04-207
 σ_2 : 84-078
 σ_3 : 05-297
R: 0.73 [0.45, 0.92]
U: 20.9°
 θg : 5.0°
 Φ : 0.161
Dg: 0.010



σ_1 : 05-209
 σ_2 : 82-085
 σ_3 : 07-300
R: 0.72 [0.48, 0.90]
U: 19.3°
 θg : 7.3°
 Φ : 0.142
Dg: 0.017

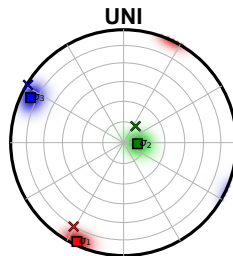


σ_1 : 04-209
 σ_2 : 82-088
 σ_3 : 06-300
R: 0.71 [0.45, 0.90]
U: 17.2°
 θg : 7.2°
 Φ : 0.120
Dg: 0.017

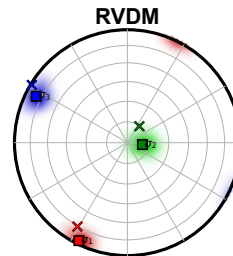
61.0°, -140.0°

NFM = 51
Med. σ = 47.8°
FM Diversity = 45.9°

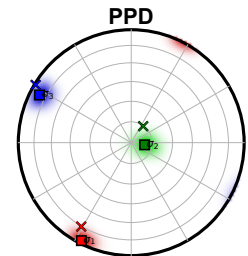
Combined Metric



σ_1 : 04-205
 σ_2 : 80-095
 σ_3 : 09-296
R: 0.67 [0.45, 0.87]
U: 13.6°
 θg : 11.6°
 Φ : 0.072
Dg: 0.073

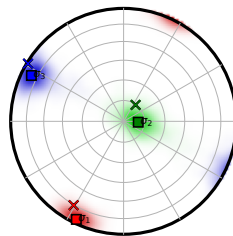


σ_1 : 04-206
 σ_2 : 79-097
 σ_3 : 10-297
R: 0.67 [0.47, 0.86]
U: 13.4°
 θg : 11.4°
 Φ : 0.074
Dg: 0.065

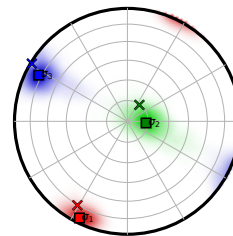


σ_1 : 03-207
 σ_2 : 80-099
 σ_3 : 09-297
R: 0.68 [0.49, 0.88]
U: 12.2°
 θg : 11.4°
 Φ : 0.058
Dg: 0.064

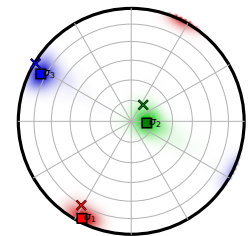
Fault Instability



σ_1 : 04-206
 σ_2 : 79-093
 σ_3 : 10-296
R: 0.77 [0.55, 0.94]
U: 21.3°
 θg : 11.3°
 Φ : 0.113
Dg: 0.057



σ_1 : 05-206
 σ_2 : 77-095
 σ_3 : 12-297
R: 0.77 [0.53, 0.94]
U: 21.3°
 θg : 10.8°
 Φ : 0.118
Dg: 0.048

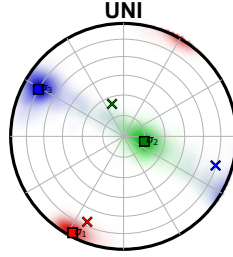


σ_1 : 04-207
 σ_2 : 79-096
 σ_3 : 11-298
R: 0.73 [0.50, 0.91]
U: 18.6°
 θg : 10.9°
 Φ : 0.101
Dg: 0.053

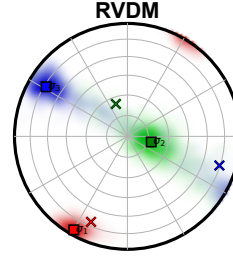
61.0°, -141.0°

NFM = 35
Med. σ = 47.8°
FM Diversity = 48.9°

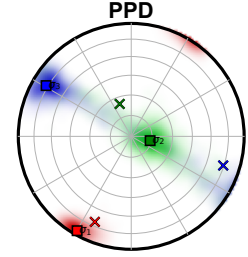
Combined Metric



σ_1 : 04-208
 σ_2 : 75-104
 σ_3 : 15-299
R: 0.82 [0.52, 0.96]
U: 36.3°
 θg : 17.5°
 Φ : 0.157
Dg: 0.088

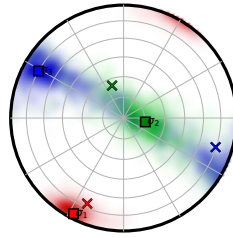


σ_1 : 05-210
 σ_2 : 72-103
 σ_3 : 17-301
R: 0.82 [0.49, 0.97]
U: 36.1°
 θg : 17.3°
 Φ : 0.141
Dg: 0.089

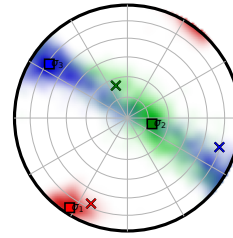


σ_1 : 04-210
 σ_2 : 76-103
 σ_3 : 13-301
R: 0.83 [0.45, 0.96]
U: 36.9°
 θg : 17.7°
 Φ : 0.131
Dg: 0.097

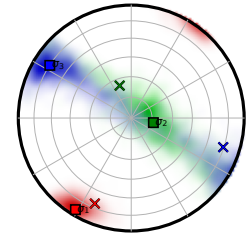
Fault Instability



σ_1 : 05-208
 σ_2 : 74-100
 σ_3 : 15-299
R: 0.92 [0.65, 0.97]
U: 31.9°
 θg : 15.7°
 Φ : 0.234
Dg: 0.075



σ_1 : 06-213
 σ_2 : 72-103
 σ_3 : 17-305
R: 0.91 [0.64, 0.97]
U: 30.1°
 θg : 17.0°
 Φ : 0.187
Dg: 0.104

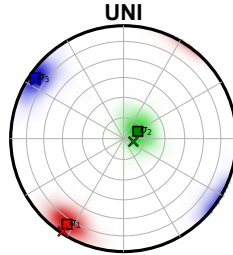


σ_1 : 06-211
 σ_2 : 74-102
 σ_3 : 15-303
R: 0.90 [0.55, 0.97]
U: 32.1°
 θg : 16.8°
 Φ : 0.189
Dg: 0.095

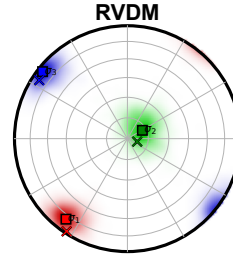
61.5°, -139.0°

NFM = 22
Med. σ = 46.0°
FM Diversity = 32.2°

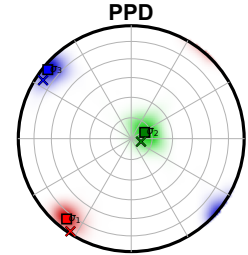
Combined Metric



σ_1 : 10-213
 σ_2 : 78-063
 σ_3 : 06-304
R: 0.65 [0.31, 0.93]
U: 22.2°
 θg : 5.6°
 Φ : 0.254
Dg: 0.017

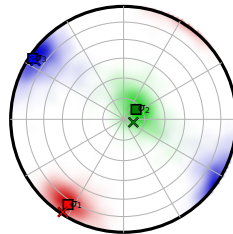


σ_1 : 11-217
 σ_2 : 78-061
 σ_3 : 05-308
R: 0.65 [0.35, 0.91]
U: 20.3°
 θg : 8.2°
 Φ : 0.185
Dg: 0.042

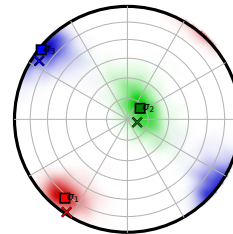


σ_1 : 10-219
 σ_2 : 79-065
 σ_3 : 05-310
R: 0.66 [0.34, 0.90]
U: 17.4°
 θg : 8.2°
 Φ : 0.153
Dg: 0.052

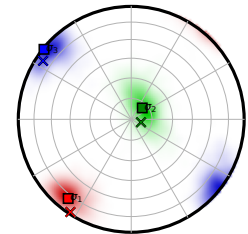
Fault Instability



σ_1 : 11-213
 σ_2 : 79-052
 σ_3 : 04-304
R: 0.75 [0.38, 0.95]
U: 31.4°
 θg : 6.9°
 Φ : 0.301
Dg: 0.032



σ_1 : 12-218
 σ_2 : 78-049
 σ_3 : 02-309
R: 0.74 [0.45, 0.94]
U: 27.6°
 θg : 9.7°
 Φ : 0.275
Dg: 0.068

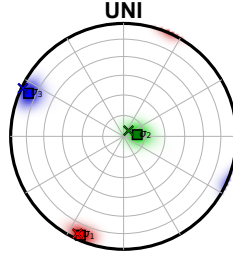


σ_1 : 11-219
 σ_2 : 79-044
 σ_3 : 01-309
R: 0.72 [0.38, 0.93]
U: 23.1°
 θg : 9.6°
 Φ : 0.233
Dg: 0.062

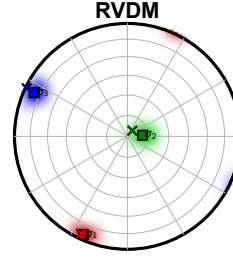
61.5°, -140.0°

NFM = 73
Med. σ = 48.5°
FM Diversity = 41.9°

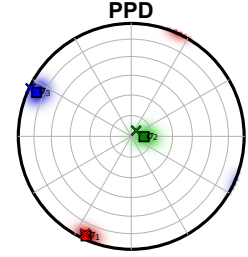
Combined Metric



σ_1 : 05-204
 σ_2 : 80-083
 σ_3 : 08-294
R: 0.68 [0.48, 0.87]
U: 12.2°
 θg : 3.1°
 Φ : 0.052
Dg: 0.010

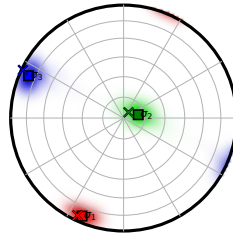


σ_1 : 05-204
 σ_2 : 79-086
 σ_3 : 10-295
R: 0.69 [0.51, 0.86]
U: 12.6°
 θg : 2.9°
 Φ : 0.056
Dg: 0.009

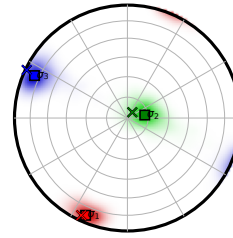


σ_1 : 04-204
 σ_2 : 81-091
 σ_3 : 08-295
R: 0.70 [0.51, 0.89]
U: 11.5°
 θg : 3.1°
 Φ : 0.043
Dg: 0.007

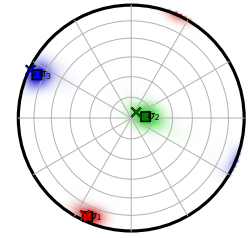
Fault Instability



σ_1 : 06-203
 σ_2 : 79-077
 σ_3 : 09-294
R: 0.79 [0.60, 0.94]
U: 16.2°
 θg : 3.5°
 Φ : 0.069
Dg: 0.005



σ_1 : 07-203
 σ_2 : 77-080
 σ_3 : 10-295
R: 0.78 [0.60, 0.92]
U: 17.3°
 θg : 4.0°
 Φ : 0.087
Dg: 0.005

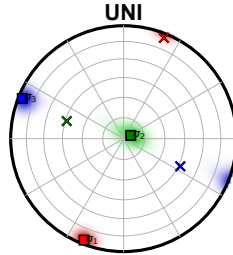


σ_1 : 05-204
 σ_2 : 80-085
 σ_3 : 09-295
R: 0.77 [0.59, 0.92]
U: 15.4°
 θg : 2.7°
 Φ : 0.066
Dg: 0.003

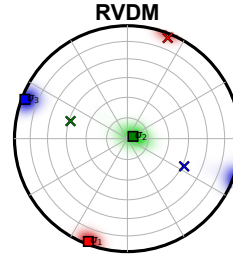
61.5°, -141.0°

NFM = 116
Med. σ = 47.0°
FM Diversity = 39.6°

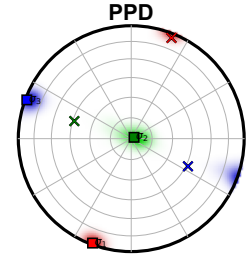
Combined Metric



σ_1 : 04-201
 σ_2 : 84-066
 σ_3 : 04-292
R: 0.77 [0.61, 0.93]
U: 12.1°
 θg : 13.7°
 Φ : 0.032
Dg: 0.035

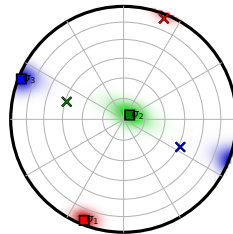


σ_1 : 03-201
 σ_2 : 86-068
 σ_3 : 03-291
R: 0.76 [0.63, 0.90]
U: 12.4°
 θg : 12.7°
 Φ : 0.038
Dg: 0.031

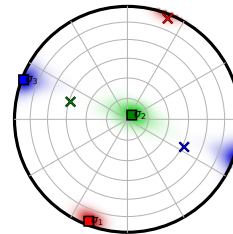


σ_1 : 02-200
 σ_2 : 88-065
 σ_3 : 02-290
R: 0.77 [0.61, 0.91]
U: 12.3°
 θg : 11.3°
 Φ : 0.029
Dg: 0.025

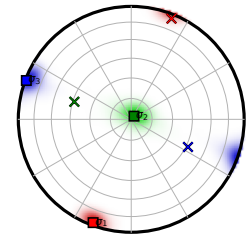
Fault Instability



σ_1 : 04-201
 σ_2 : 85-055
 σ_3 : 03-292
R: 0.85 [0.71, 0.95]
U: 13.6°
 θg : 12.4°
 Φ : 0.042
Dg: 0.030



σ_1 : 04-201
 σ_2 : 86-046
 σ_3 : 02-291
R: 0.84 [0.70, 0.94]
U: 15.3°
 θg : 12.0°
 Φ : 0.056
Dg: 0.029

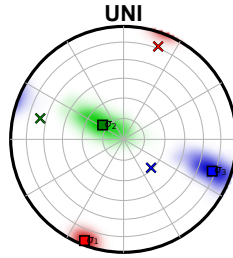


σ_1 : 03-200
 σ_2 : 87-041
 σ_3 : 01-290
R: 0.82 [0.68, 0.93]
U: 13.7°
 θg : 11.4°
 Φ : 0.046
Dg: 0.026

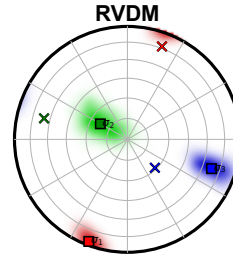
61.5°, -142.0°

NFM = 63
Med. σ = 45.5°
FM Diversity = 34.8°

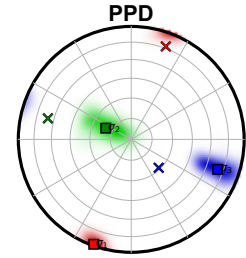
Combined Metric



σ_1 : 04-201
 σ_2 : 72-304
 σ_3 : 18-110
R: 0.81 [0.62, 0.94]
U: 16.8°
 θg : 22.2°
 Φ : 0.059
Dg: 0.113

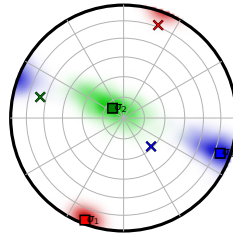


σ_1 : 04-201
 σ_2 : 67-300
 σ_3 : 22-109
R: 0.80 [0.67, 0.92]
U: 15.8°
 θg : 21.3°
 Φ : 0.066
Dg: 0.108

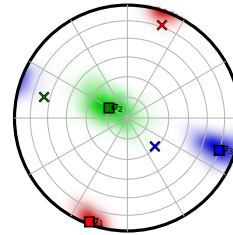


σ_1 : 02-200
 σ_2 : 70-294
 σ_3 : 20-109
R: 0.80 [0.64, 0.92]
U: 15.9°
 θg : 19.8°
 Φ : 0.061
Dg: 0.089

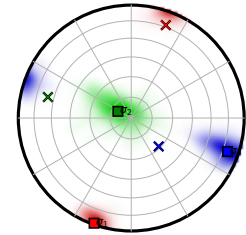
Fault Instability



σ_1 : 04-201
 σ_2 : 79-312
 σ_3 : 10-110
R: 0.84 [0.65, 0.95]
U: 19.5°
 θg : 22.4°
 Φ : 0.073
Dg: 0.109



σ_1 : 02-200
 σ_2 : 75-299
 σ_3 : 15-109
R: 0.81 [0.62, 0.94]
U: 19.9°
 θg : 21.0°
 Φ : 0.096
Dg: 0.095

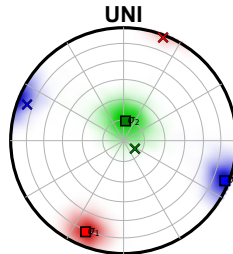


σ_1 : 01-199
 σ_2 : 79-297
 σ_3 : 11-109
R: 0.80 [0.60, 0.94]
U: 20.0°
 θg : 21.0°
 Φ : 0.089
Dg: 0.090

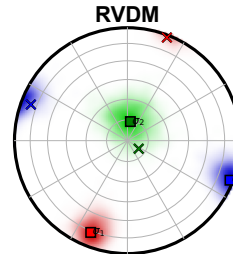
62.0°, -140.0°

NFM = 29
Med. σ = 52.4°
FM Diversity = 37.8°

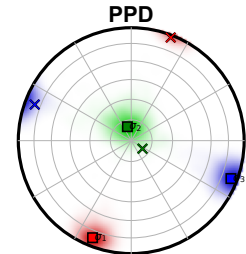
Combined Metric



σ_1 : 14-203
 σ_2 : 76-006
 σ_3 : 04-112
R: 0.66 [0.38, 0.90]
U: 23.0°
 θg : 15.4°
 Φ : 0.153
Dg: 0.056

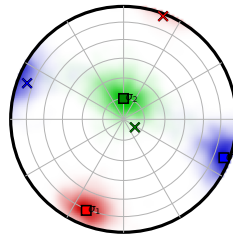


σ_1 : 14-202
 σ_2 : 76-009
 σ_3 : 03-111
R: 0.65 [0.38, 0.90]
U: 22.8°
 θg : 15.0°
 Φ : 0.120
Dg: 0.053

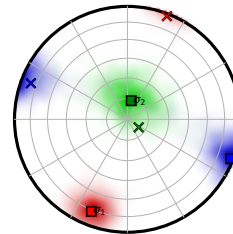


σ_1 : 08-202
 σ_2 : 80-345
 σ_3 : 06-111
R: 0.67 [0.34, 0.93]
U: 22.5°
 θg : 12.4°
 Φ : 0.111
Dg: 0.031

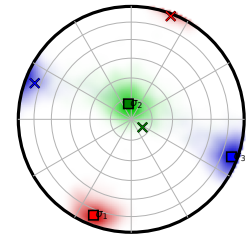
Fault Instability



σ_1 : 14-202
 σ_2 : 75-360
 σ_3 : 06-111
R: 0.77 [0.46, 0.95]
U: 30.7°
 θg : 16.1°
 Φ : 0.194
Dg: 0.065



σ_1 : 13-201
 σ_2 : 76-012
 σ_3 : 02-111
R: 0.74 [0.42, 0.93]
U: 29.7°
 θg : 14.8°
 Φ : 0.161
Dg: 0.056

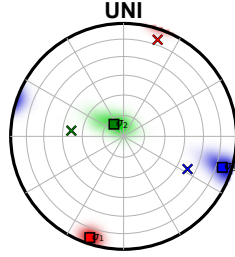


σ_1 : 10-202
 σ_2 : 79-350
 σ_3 : 06-111
R: 0.76 [0.41, 0.95]
U: 30.2°
 θg : 13.0°
 Φ : 0.141
Dg: 0.038

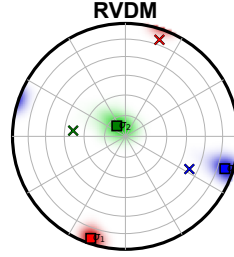
62.0°, -141.0°

NFM = 95
Med. σ = 46.5°
FM Diversity = 38.2°

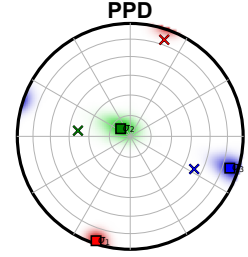
Combined Metric



σ_1 : 06-198
 σ_2 : 79-322
 σ_3 : 09-107
R: 0.76 [0.60, 0.90]
U: 13.8°
 θg : 18.5°
 Φ : 0.035
Dg: 0.082

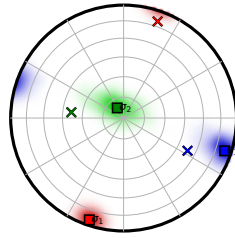


σ_1 : 05-199
 σ_2 : 80-321
 σ_3 : 08-108
R: 0.74 [0.60, 0.88]
U: 13.3°
 θg : 17.9°
 Φ : 0.036
Dg: 0.075

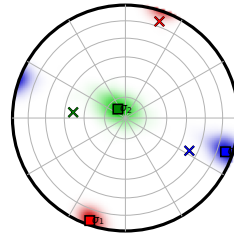


σ_1 : 03-198
 σ_2 : 81-309
 σ_3 : 08-108
R: 0.75 [0.58, 0.89]
U: 12.8°
 θg : 16.2°
 Φ : 0.033
Dg: 0.061

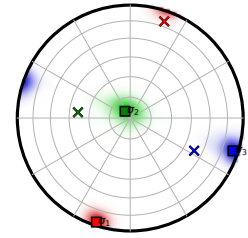
Fault Instability



σ_1 : 05-199
 σ_2 : 81-328
 σ_3 : 07-108
R: 0.82 [0.65, 0.94]
U: 16.2°
 θg : 17.9°
 Φ : 0.057
Dg: 0.076



σ_1 : 04-199
 σ_2 : 82-320
 σ_3 : 07-109
R: 0.80 [0.64, 0.92]
U: 15.1°
 θg : 16.9°
 Φ : 0.051
Dg: 0.066

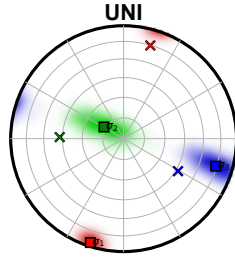


σ_1 : 03-198
 σ_2 : 84-322
 σ_3 : 05-108
R: 0.80 [0.62, 0.93]
U: 14.9°
 θg : 16.7°
 Φ : 0.048
Dg: 0.062

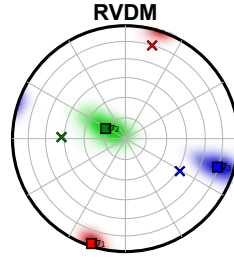
62.0°, -142.0°

NFM = 70
Med. σ = 45.1°
FM Diversity = 37.6°

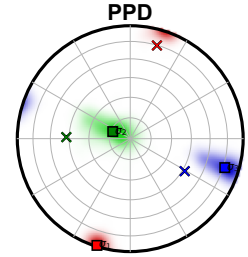
Combined Metric



σ_1 : 04-198
 σ_2 : 74-301
 σ_3 : 16-107
R: 0.80 [0.59, 0.95]
U: 17.4°
 θg : 20.5°
 Φ : 0.051
Dg: 0.107

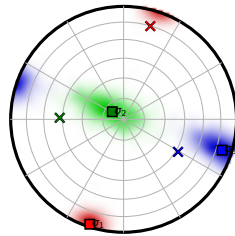


σ_1 : 03-198
 σ_2 : 74-297
 σ_3 : 16-107
R: 0.79 [0.63, 0.91]
U: 15.3°
 θg : 19.6°
 Φ : 0.049
Dg: 0.096

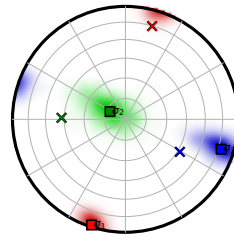


σ_1 : 01-197
 σ_2 : 76-292
 σ_3 : 14-107
R: 0.79 [0.59, 0.94]
U: 15.8°
 θg : 18.5°
 Φ : 0.046
Dg: 0.083

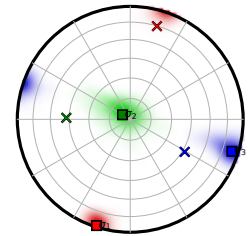
Fault Instability



σ_1 : 03-198
 σ_2 : 80-304
 σ_3 : 09-107
R: 0.83 [0.61, 0.95]
U: 19.8°
 θg : 20.1°
 Φ : 0.072
Dg: 0.097



σ_1 : 02-198
 σ_2 : 78-297
 σ_3 : 12-107
R: 0.82 [0.63, 0.95]
U: 18.1°
 θg : 19.2°
 Φ : 0.066
Dg: 0.090



σ_1 : 01-198
 σ_2 : 84-301
 σ_3 : 06-107
R: 0.80 [0.59, 0.94]
U: 18.6°
 θg : 19.6°
 Φ : 0.062
Dg: 0.086

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