**Paleoseismic Site Database - Quality Rankings**

**Slip Rate (unmodified from UCERF)**

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| **Quality Ranking** | **Category** | **Description** |
| QR1 Offset feature | A - well constrained | Identifiable piercing line or feature (typically at or near the surface) is well documented or can be independently verified from mapping or logs. If offset feature is in the subsurface, data is presented and correlations appear reliable. Offset feature is described or documented. A range and (or) best-estimate value with uncertainties is provided or can be obtained from the data. |
|  | B - moderately constrained | For surficial or near-surficial features, only a best estimate or single value is given for the feature offset, and documentation does not allow for a range of values to be determined. For other determinations of offset (for example, cross sections, seismic lines), offset value may be determined indirectly and may be somewhat model dependent. For cases where no range of offset values reported, there is some confidence that there are relatively small uncertainties on the offset feature. An example of this would be an uplifted marine terrace that is correlated to a known sea-level high stand. Such features typically have small measurement uncertainties, because uplift is usually measured relative to current sea level. |
|  | C – poorly constrained | Major assumptions are involved in measuring the offset. Correlation of the feature may by suspect, or other alternatives possible, but not described well enough to understand the range of possible values. |
|  | D – very poorly constrained | Reported offset is suspect, or so poorly constrained, that the slip rate calculated is not considered reliable. |
| QR2 Dating | A - well constrained | Radiometric dates, or correlation to a well-dated datum (such as the Bishop ash in eastern California). Uncertainties reported or can be estimated from other studies. |
|  | B - moderately constrained | A general correlation to a known datum or climatic event such as a glaciation. If uncertainties are reported, they are not formal uncertainties and only loosely constrained. |
|  | C – poorly constrained | A general correlation to a known datum or climatic event such as a glaciation. If uncertainties are reported, they are not formal uncertainties and only loosely constrained. |
|  | D | Reported age is suspect or so poorly constrained that the slip rate calculated is not considered reliable. |
| Q3 Overall rating | A - well constrained | Offset feature and dating are well constrained. Slip rate is believed to represent deformation across the entire width of the fault zone. Offset is also believed to have accumulated over enough earthquakes sufficient to provide a robust average rate. |
|  | B - moderately constrained | One or both components of the slip rate are less than well constrained. Offset feature may not span full width of the fault zone, but investigators provide an assessment to the degree of this. |
|  | C – poorly constrained | One or both components of the slip rate are poorly constrained, and the rate may not be reliable. Offset may not span entire fault zone or may represent only a limited number of earthquakes, so that the reported slip rate is unlikely to represent the fault slip rate or a long-term average over multiple earthquakes. |
|  | D – unreliable | The slip rate calculated is not considered reliable, because the offset or dating constraints are unreliable. Typically, if either the feature or dating constraint is assigned a “D” quality rating, the overall rating will be “D.” However, other factors that suggest the rate is not representative of the fault section could give a rate a “D” overall rating, such as the offset feature not spanning the fault zone or the offset only representing a limited number of earthquakes. Details of how a rate is assigned this rating are described in the comments section. |

**Single Event Displacement**

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| **Quality Ranking** | **Category** | **Description** |
| QR  Overall | A – high | Multiple (≥3) measurements using clear fault-normal piercing lines that intersect a simple, well-defined fault zone. Well quantified uncertainties. |
|  | B – medium | Few (1-2) measurements or multiple measurements using features that are oblique to a broad, poorly defined fault zone. Uncertainties reported. |
|  | C – low | Few (1-2) measurements or estimates from field data. No uncertainties reported. |

**Earthquake timing and Recurrence Interval**

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| **Quality Ranking** | **Category** | **Description** |
| QR1 EQ Dating | A - good | Multiple (≥3) high quality radiometric dates (e.g., AMS radiocarbon of a small fraction) or robust identification of a well-dated datum (e.g., microprobe ID of a tephra). Well quantified uncertainties. |
|  | B - average | Few and/or medium-low quality radiometric dates (e.g., pre-AMS radiocarbon, charcoal, OSL) or moderately-constrained (e.g., field ID) correlation to a datum (e.g., tephra). Uncertainties reported. |
|  | C – poor | No radiometric dates or minimum or maximum dates only. Inferred correlation with a known datum (e.g., tephra), climatic event (e.g., end of LGM), or assumption (e.g., pre-1840 AD). Poor or no uncertainties. |
| QR2 Evidence event is an earthquake | A - strong | Trench event horizon or Historic rupture. |
|  | B - moderate | Interpreted EQ-related units in a trench (e.g., colluvial wedge), near-fault record (e.g., ponded sediments), or off-fault record with rigorous consideration of event origin (e.g., lakes). |
|  | C – weak | Inferred earthquakes within unclear trench stratigraphy or from off-fault data with little consideration of event origin (e.g., landslide). |
| Q3 Overall – see matrix | 1 - high | Both components are high (A+A). |
|  | 2 - moderate | One or both components are moderate (A+B, B+A, B+B). |
|  | 3 – low | One or both components are low (A+C, B+C, C+C, C+B, C+A). |

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| Matrix - EQ certainty ranking  1 = high, 2=moderate, 3=low | | Quality of age control | | |
| A-Good | B-Average | C-Poor |
| Evidence event is an earthquake | A-Strong | 1 | 2 | 3 |
| B-Moderate | 2 | 2 | 3 |
| C-Weak | 3 | 3 | 3 |

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| Q4 EQ RI | A - high | ≥5 high (1) or medium (2) quality EQs |
|  | B - moderate | ≥3 moderate (2) quality EQs or calculated from n earthquakes during a well dated time interval |
|  | C – low | ≥3 low (3) quality EQs or calculated from n earthquakes during a poorly dated time interval |