Section 3 of Electronic Supplement

to

Displacement and Geometrical Characteristics of Earthquake Surface Ruptures: Issues and Implications for Seismic Hazard Analysis and the Process of Earthquake Rupture.

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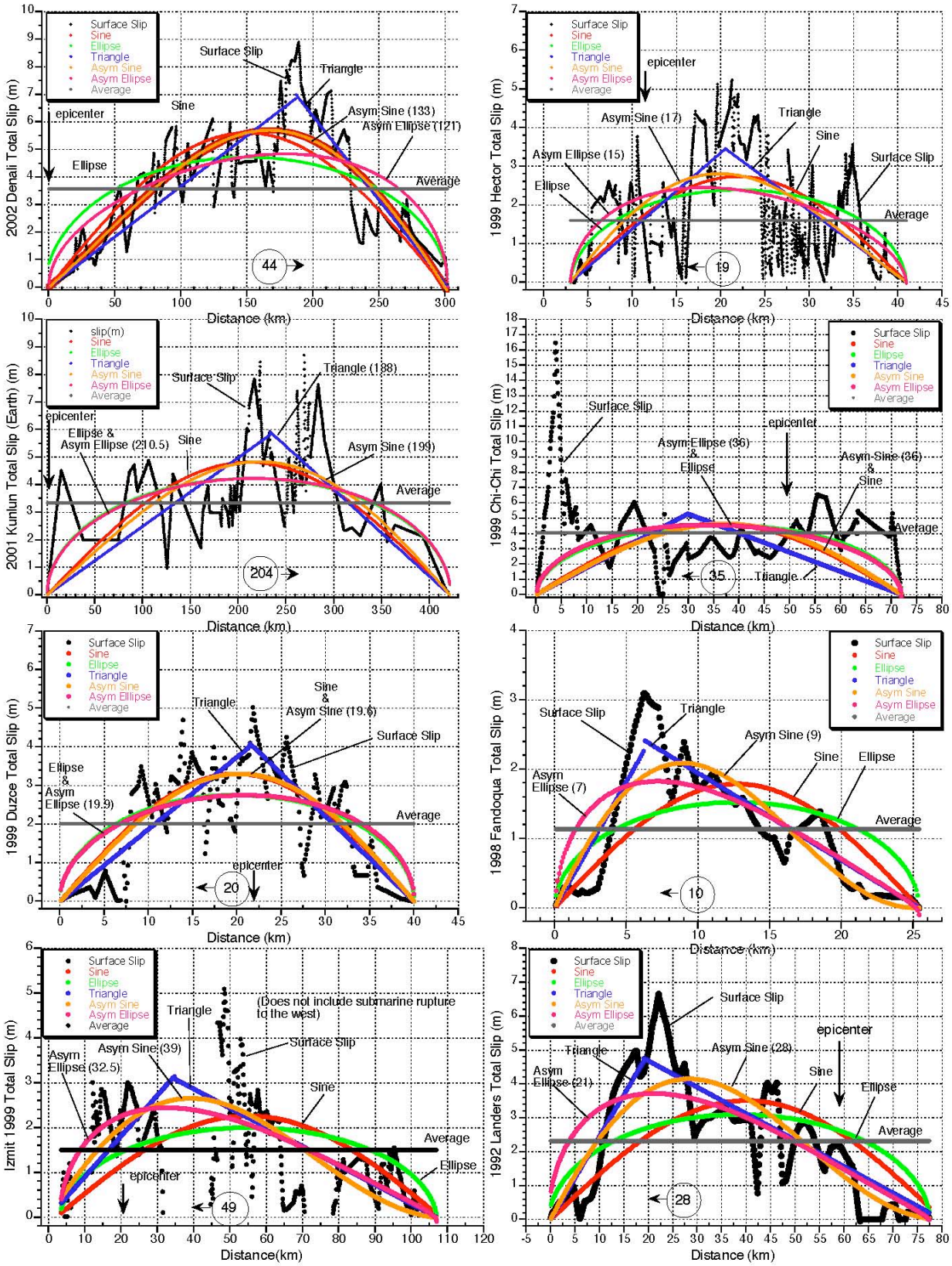
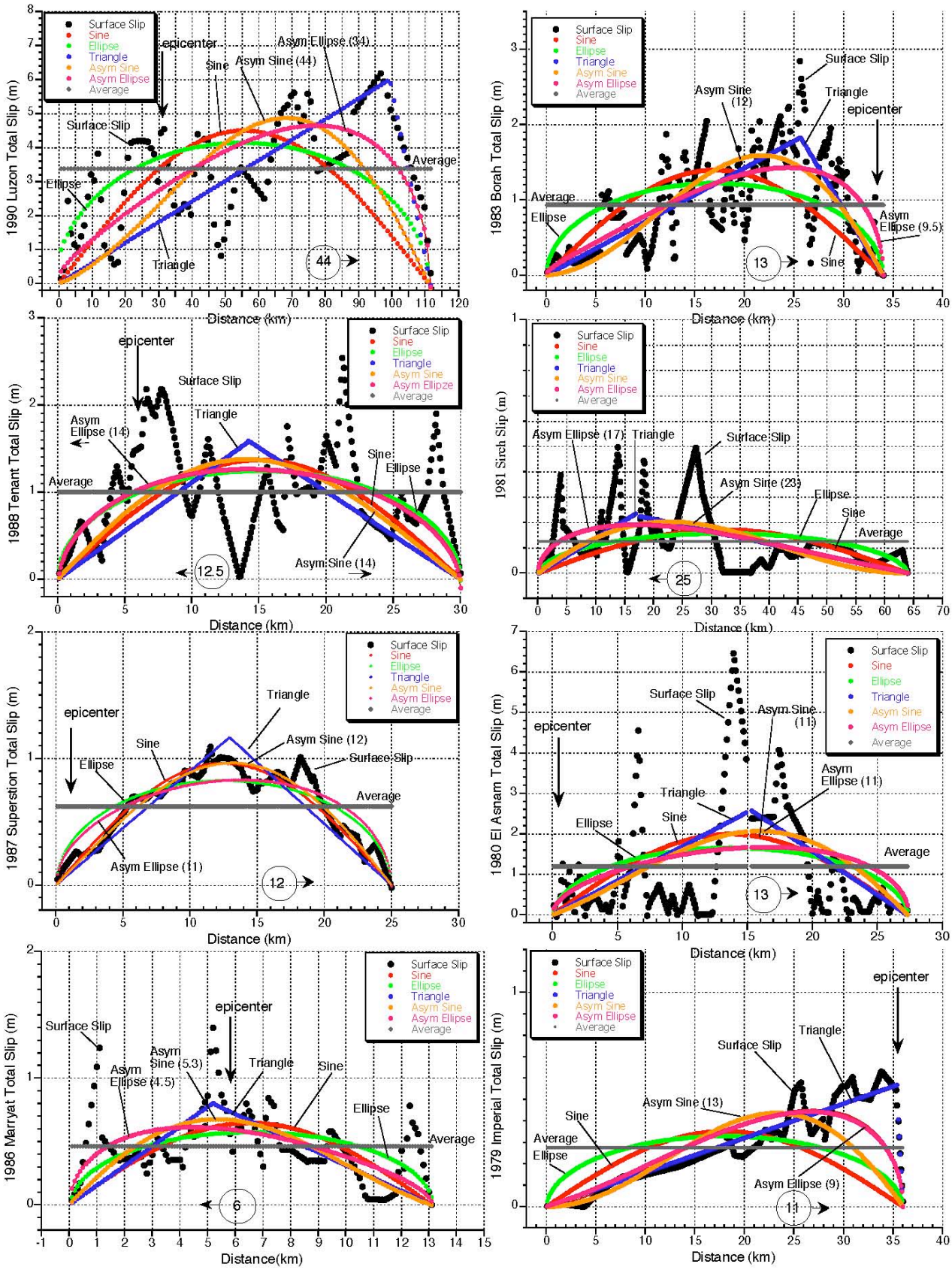
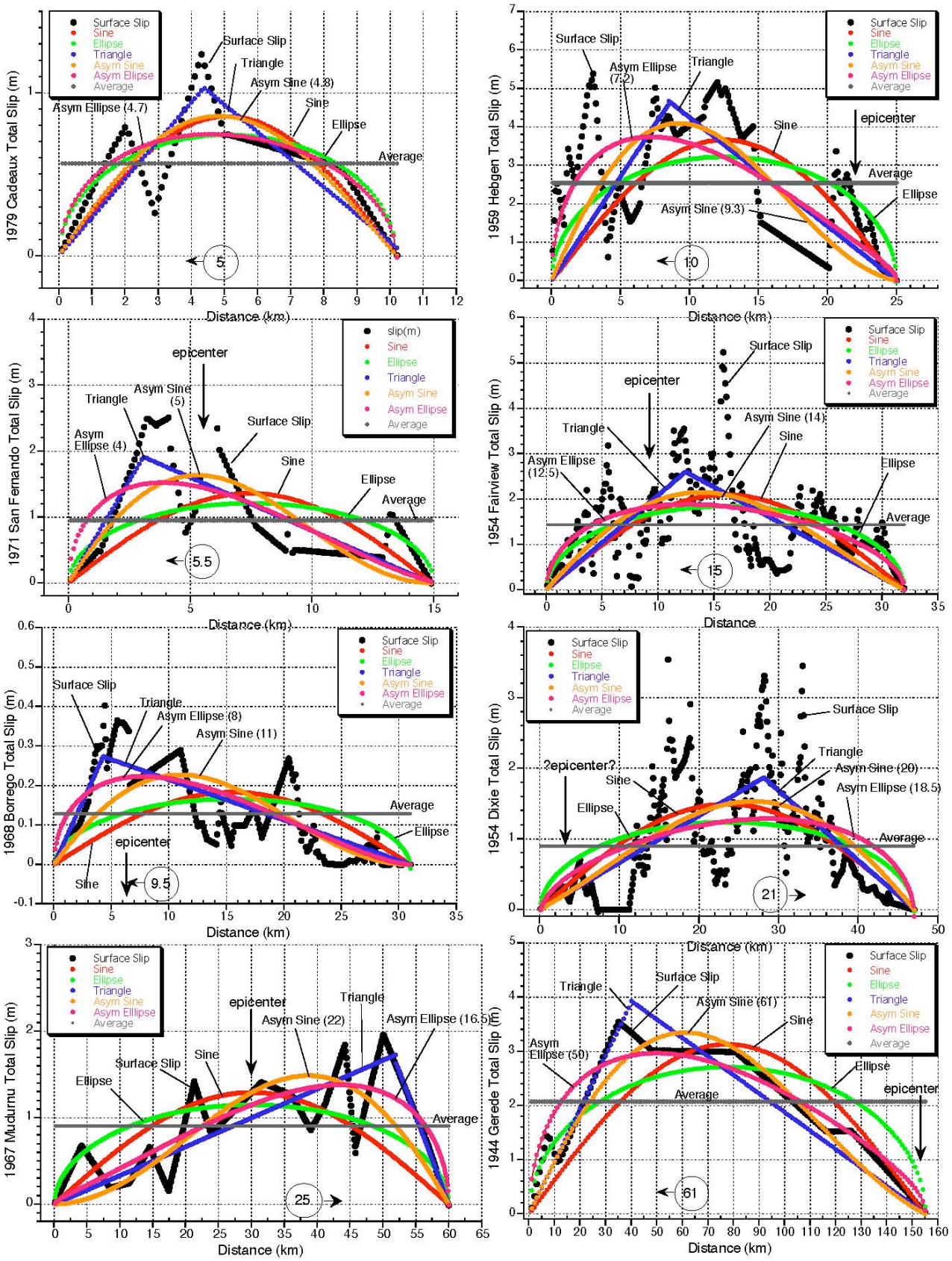
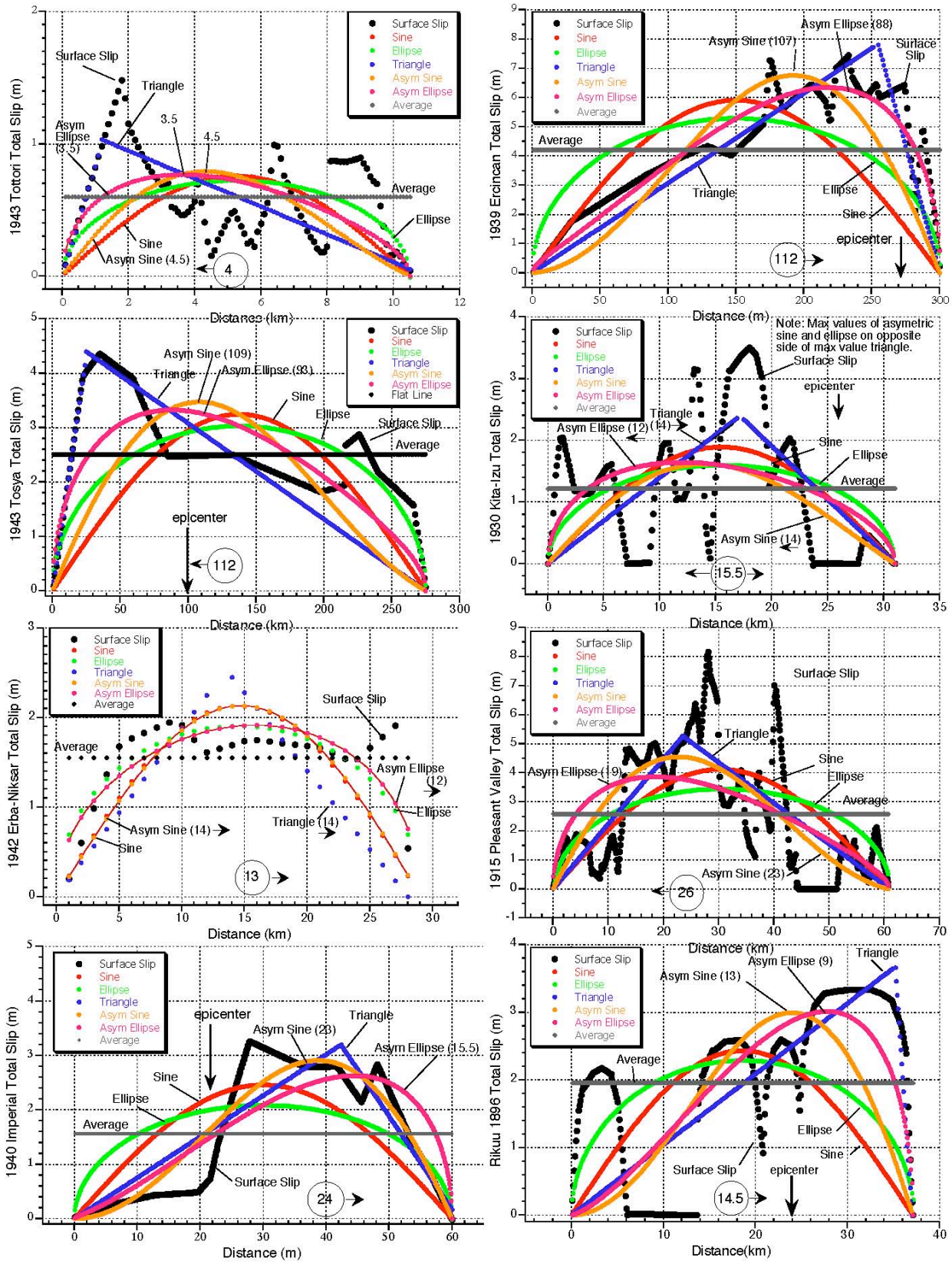
Curve Fits to Digitized Slip Distributions

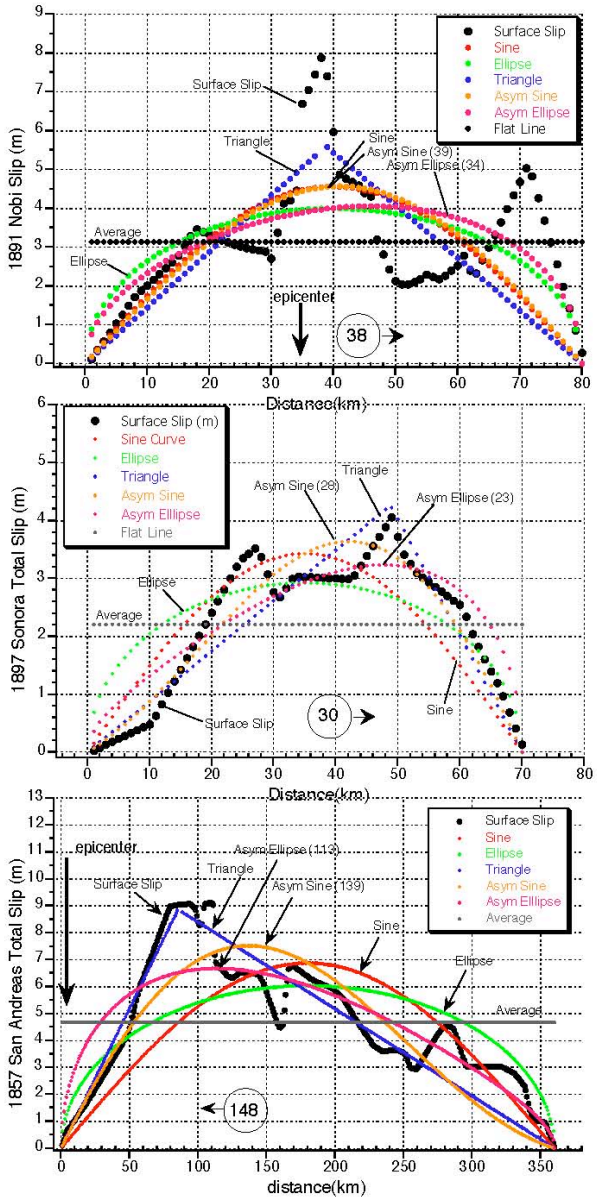
Digitized surface slip distributions of earthquakes listed in Table 1 and curve-fits to those distributions are arranged in reverse chronological order. The name and date of each earthquake are labeled on vertical axis of each plot. Type of curve-fit is labeled and discussed in main text and caption to Figure 9 of main text. Position of epicenter with respect to fault strike is when available labeled and indicated by downward pointing arrow. Integration of the digitized values of surface slip allows definition of a point where half the cumulative slip falls on either side. That value is defined for each slip distribution (value in circle) by the distance in km to nearest fault endpoint. Values in parentheses are distances in km of nearest fault endpoint of peak of the asymmetric sine and ellipse curves.


2002 Denali Total Slip (m)
Distance (km)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Average
epicenter
Asym Sine (133)
Asym Ellipse (121)
44
1999 Hector Total Slip (m)
Asym Sine (17)
Asym Ellipse (15)
19
2001 Kunlun Total Slip (Earth) (m)
slip(m)
Triangle (188)
Ellipse &
Asym Ellipse (210.5)
Asym Sine (199)
204
1999 Chi-Chi Total Slip (m)
Asym Ellipse (36)
Asym Sine (36)
35
1999 Duzce Total Slip (m)
Sine
&
Asym Sine (19.6)
Ellipse
&
Asym
Ellipse (19.9)
20
1998 Fandoqua Total Slip (m)
Asym Sine (9)
Asym
Ellipse (7)
10
Izmit 1999 Total Slip (m)
Distance(km)
(Does not include submarine rupture
to the west)
Asym Sine (39)
Asym
Ellipse (32.5)
49
1992 Landers Total Slip (m)
Asym Sine (28)
Asym
Ellipse (21)
28


1990 Luzon Total Slip (m)
Distance (km)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Average
epicenter
Asym Ellipse (34)
Asym Sine (44)
44
1983 Borah Total Slip (m)
Asym Sine (12)
Asym Ellipse (9.5)
13
1988 Tenant Total Slip (m)
Asym Ellipse (14)
Asym Sine (14)
12.5
1981 Sirch Slip (m)
Asym Ellipse (17)
Asym Sine (23)
25
1987 Superstion Total Slip (m)
Asym Sine (12)
Asym Ellipse (11)
12
1980 El Asnam Total Slip (m)
Asym Sine (11)
Asym Ellipse (11)
13
1986 Marryat Total Slip (m)
Asym Sine (5.3)
Asym Ellipse (4.5)
6
1979 Imperial Total Slip (m)
Asym Sine (13)
Asym Ellipse (9)
11


1979 Cadeaux Total Slip (m)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Average
Surface Slip
Triangle
Asym Sine (4.8)
Sine
Ellipse
Asym Ellipse (4.7)
Average
5
Distance (km)
1959 Hebgen Total Slip (m)
Surface Slip
Asym Ellipse (7.2)
Triangle
Sine
epicenter
Average
Ellipse
Asym Sine (9.3)
10
Distance (km)
1971 San Fernando Total Slip (m)
slip(m)
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Average
epicenter
Triangle
Asym Sine (5)
Surface Slip
Asym Ellipse (4)
Sine
Ellipse
Average
5.5
Distance (km)
1954 Fairview Total Slip (m)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Average
Surface Slip
epicenter
Triangle
Asym Sine (14)
Sine
Asym Ellipse (12.5)
Ellipse
Average
15
Distance
1968 Borrego Total Slip (m)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Average
Surface Slip
Triangle
Asym Ellipse (8)
Asym Sine (11)
Average
Ellipse
epicenter
Sine
9.5
Distance (km)
1954 Dixie Total Slip (m)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Average
Surface Slip
Triangle
?epicenter?
Asym Sine (20)
Sine
Asym Ellipse (18.5)
Ellipse
Average
21
Distance (km)
1967 Mudurnu Total Slip (m)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Average
epicenter
Triangle
Asym Sine (22)
Asym Ellipse (16.5)
Surface Slip
Sine
Ellipse
Average
25
Distance (km)
1944 Gerede Total Slip (m)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Average
Triangle
Surface Slip
Asym Sine (61)
Sine
Asym Ellipse (50)
Ellipse
Average
epicenter
61
Distance (km)


1943 Tottori Total Slip (m)
Distance (km)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Average
Surface Slip
Triangle
3.5
4.5
Asym Ellipse (3.5)
Average
Ellipse
Sine
Asym Sine (4.5)
4
1939 Ercincan Total Slip (m)
Distance (m)
Asym Ellipse (88)
Asym Sine (107)
Surface Slip
Average
Triangle
Ellipse
Sine
epicenter
112
1943 Tosya Total Slip (m)
Distance (km)
Flat Line
Asym Sine (109)
Triangle
Asym Ellipse (98)
Sine
Ellipse
Surface Slip
Average
epicenter
112
1930 Kita-Izu Total Slip (m)
Distance (km)
Note: Max values of asymetric sine and ellipse on opposite side of max value triangle.
Surface Slip
epicenter
Triangle
Asym Ellipse (12)
(14)
Sine
Ellipse
Average
Asym Sine (14)
15.5
1942 Erba-Niksar Total Slip (m)
Distance (km)
Surface Slip
Average
Asym Ellipse
(12)
Ellipse
Triangle (14)
Asym Sine (14)
Sine
13
1915 Pleasant Valley Total Slip (m)
Distance (km)
Surface Slip
Triangle
Asym Ellipse (19)
Sine
Ellipse
Average
Asym Sine (23)
26
1940 Imperial Total Slip (m)
Distance (m)
epicenter
Triangle
Asym Sine (23)
Asym Ellipse (15.5)
Sine
Ellipse
Average
Surface Slip
24
Rikuu 1896 Total Slip (m)
Distance(km)
Asym Ellipse (9)
Triangle
Asym Sine (13)
Average
Ellipse
Sine
Surface Slip
epicenter
14.5


1891 Nobi Slip (m)
Distance(km)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Ellipse
Flat Line
Surface Slip
Triangle
Sine
Asym Sine (39)
Asym Ellipse (34)
Average
Ellipse
epicenter
38
1897 Sonora Total Slip (m)
Distance(km)
Surface Slip (m)
Sine Curve
Ellipse
Triangle
Asym Sine
Asym Elllipse
Flat Line
Asym Sine (28)
Triangle
Asym Ellipse (23)
Ellipse
Average
Surface Slip
30
Sine
1857 San Andreas Total Slip (m)
distance(km)
Surface Slip
Sine
Ellipse
Triangle
Asym Sine
Asym Elllipse
Average
epicenter
Asym Ellipse (112)
Triangle
Surface Slip
Asym Sine (139)
Sine
Ellipse
Average
148