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Correction

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A comparison of upper mantle subcontinental electrical conductivity for North America, Europe and Asia

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In the analysis of the regional geomagnetic field components we discovered a small programming error that affected the modelling of the southern hemisphere D and Z components used to compute the spherical harmonic coefficients for each continental sector. Revised Fig. 2 below illustrates the corrected internal currents. Note the particular changes required at low and equatorial latitudes.

Because the spherical harmonic coefficients determine the conductivity profiles reported in this paper, Figs. 3 and 4 and Table 1 also need revision. Paired values of the equivalent substitute layer conductivities and depths for sets of odd ($n - m$), separated for m (i.e., separated by wavelength) were smoothed using a regionally weighted regression technique on each set. A regionally weighted regression representation of all smoothed set values is presented in the revised Fig. 3, below. The best fitting exponentials representing the data are shown in Fig. 4 and Table 1. Old Fig. 5 may be omitted.

Table 1

Region	Approx. depth d (km)	Conductivity σ (s/m)
North America	32- 42	0.07
	279-336	0.00089 exp (0.014 d)
	341-487	0.035 exp (0.0027 d)
Europe	3-126	0.0078 exp (0.018 d)
	187-274	0.010 exp (0.0036 d)
	357-501	0.0027 exp (0.0073 d)
Central Asia	90-186	0.0062 exp (0.0128 d)
	270-370	0.0067 exp (0.0081 d)
	440-653	0.032 exp (0.0039 d)
East Asia	69-119	0.010 exp (0.0013 d)
	189-288	0.0089 exp (0.0063 d)
	294-430	0.017 exp (0.0035 d)
	466-587	0.024 exp (0.0031 d)

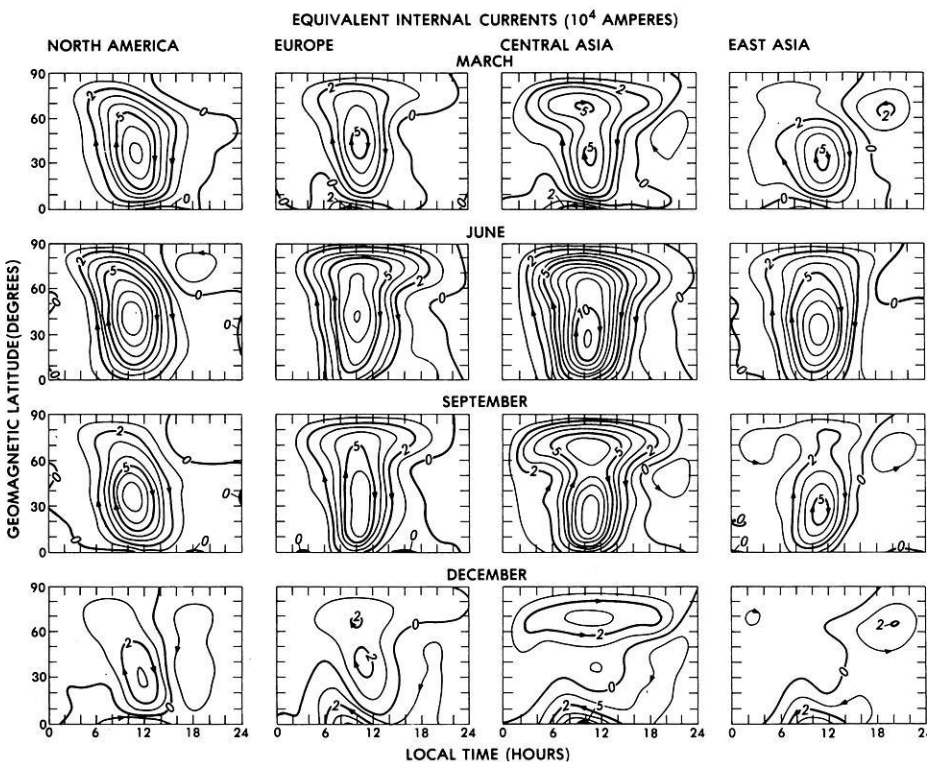


Fig. 2. Equivalent internal induced current for Sq daily variations of field in continental regions of North America (first column), Europe (second column), Central Asia (third column) and East Asia (fourth column). Examples for the four selected months of March, June, September and December are given in the top to bottom rows respectively. Each pattern in local-time versus latitude coordinates shows the equivalent current contours in 10^4 -A steps with arrows for the required flow direction. A midnight zero current level was assumed

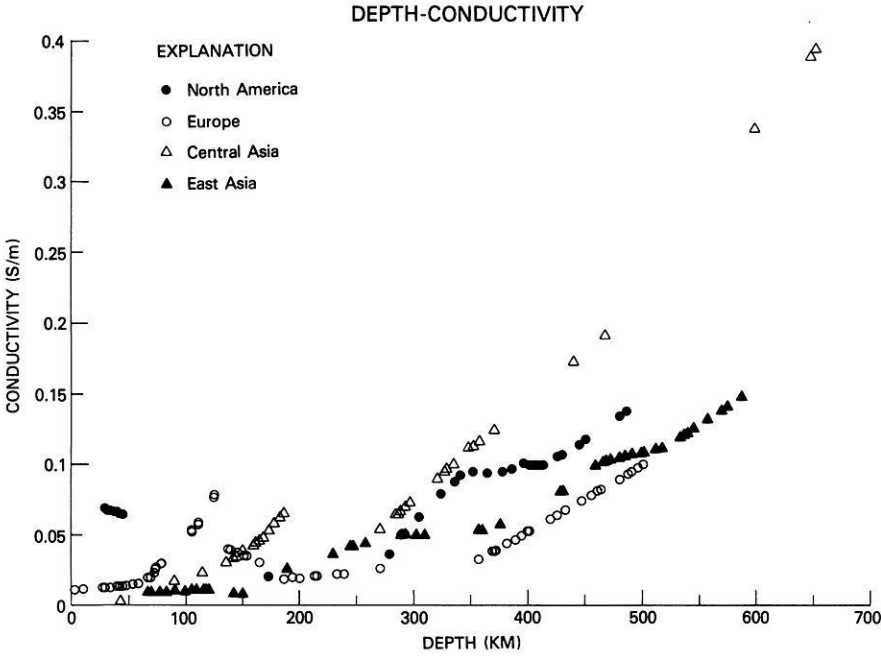


Fig. 3. Depth-conductivity values from Eqs. (10) and (11) obtained by application of the spherical harmonic analysis coefficients to Eqs. (7) and (8). The evaluations are separated for the North American, European, Central Asian and East Asian regions

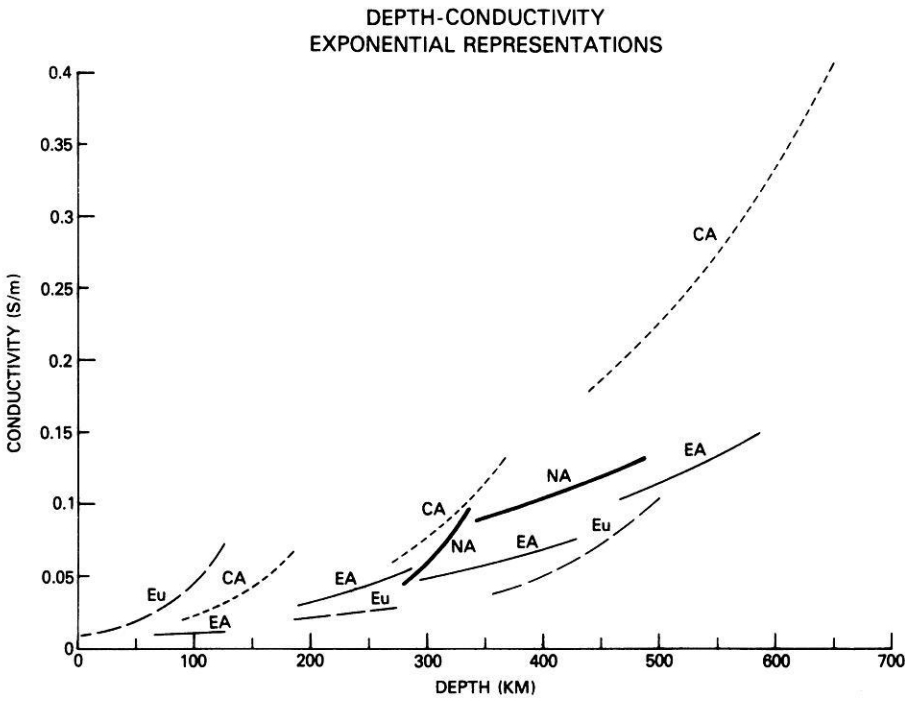


Fig. 4. Best exponential representations of depth-conductivity data given in Fig. 3. Separate curves are shown for North America, Europe, Central Asia and East Asia. The functions are listed in Table 1