Determination of longitude weighting factors (LWF) for *am* calculation

(Notations used in the present document are the same as in Mayaud (1980) for the convenience of the reader.)

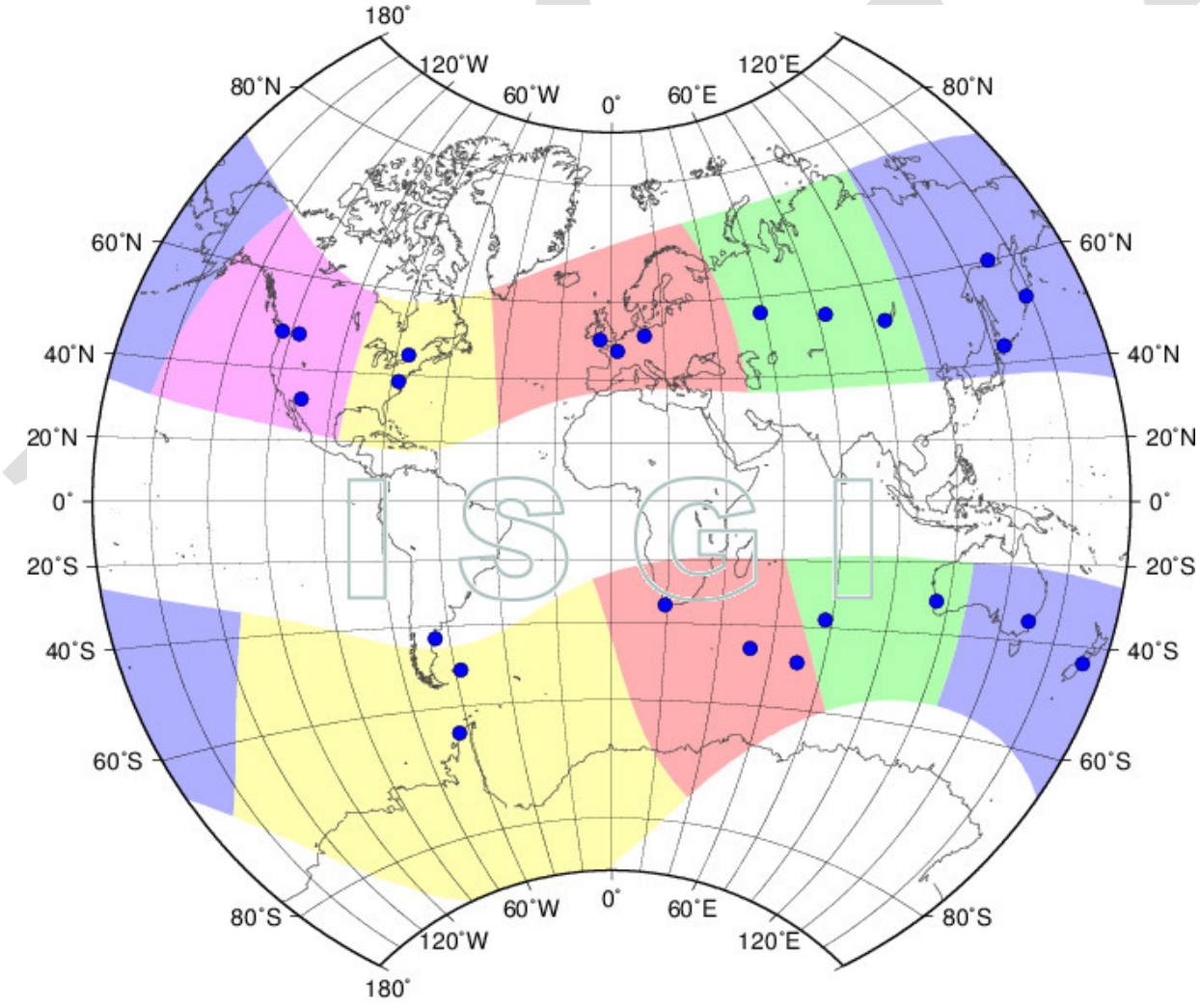
Main references:

Mayaud, P. N. (1980) - Derivation, meaning, and use of geomagnetic indices, Geophys. Monogr. Ser., 22. AGU, Washington, DC.

Mayaud, P. N., and M. Menvielle (1980) - A report on Km observatories visit, IAGA Bull., 32i, 113-135, IUGG, Paris.

Computation principles:

- For each observatory of the *am* network, the angular distance δ between the observatory position and the closest point P of the auroral zone (identified to ±69° corrected geomagnetic latitude **at epoch 1965**) is determined [using native P.N. Mayaud's program for homogeneity]. The corrected geomagnetic longitude ϕ of that point P is obtained.
- The mean longitude Λ of each sector is calculated and rounded to nearest 5°.
- The width $\Delta\Lambda$ of the longitude band, demarcated by the longitude of the two groups located on each side, allowed to extract the longitude weighting factor λ for each sector: $\lambda = \Delta\Lambda / 720$.



NORTHERN HEMISPHERE

		Geographic Location						
Sector	**Obs.**	**Latitude** (°)	**Longitude** (°)	δ (°)	ϕ (°)	Λ (°)	$\Delta\Lambda$ (°)	λ
Sector 1 (Extreme East)	MGD	60.051	150.728	14.99	211.60	215	150	0.208
	MMB	43.910	144.190	31.31	207.24			
	PET	52.971	158.248	21.71	219.17			
Sector 2 (Central Asia)	ARS	56.433	58.567	17.77	135.06	155	130	0.180
	IRT	52.167	104.450	23.04	172.95			
	NVS	54.850	83.230	20.01	155.68			
Sector 3 (Europe)	CLF	48.020	2.270	21.56	82.73	85	160	0.222
	HAD	51.000	355.520	17.66	77.51			
	NGK	52.070	12.680	18.93	93.65			
Sector 4 (East.North. America)	FRD	38.200	282.630	18.34	353.79	355	140	0.195
	OTT	45.403	284.448	11.23	356.85			
Sector 5 (West. North. America)	NEW	48.270	242.880	12.76	303.01	305	140	0.195
	TUC	32.180	249.270	27.14	316.39			
	VIC	48.520	236.580	13.78	296.19			

SOUTHERN HEMISPHERE

		Geographic Location						
Sector	**Obs.**	**Latitude** (°)	**Longitude** (°)	δ (°)	ϕ (°)	Λ (°)	$\Delta\Lambda$ (°)	λ
Sector 6 (Eastern Australia)	CNB	-35.320	149.360	21.18	224.92	240	215	0.299
	EYR	-43.420	172.350	17.32	256.19			
Sector 7 (Western Australia)	AMS	-37.800	77.570	20.89	133.42	155	140	0.194
	GNG	-31.356	115.715	22.85	181.22			
Sector 8 (Indian Ocean, Africa)	CZT	-46.430	51.870	19.16	102.37	100	145	0.201
	HER	-34.430	19.230	39.09	79.10			
	PAF	-49.350	70.260	11.68	119.27			
Sector 9 (South America)	AIA	-65.250	295.750	19.50	9.76	10	220	0.306
	PST	-51.700	302.110	33.19	13.38			
	TRW	-43.300	294.700	41.34	6.72			