Maximum Entropy Spectral Analysis of Total Ozone: Errata

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In our earlier communication (KANE *et al.*, 1984/85), we reported results of a Maximum Entropy Spectral Analysis (MESA) of the total ozone data series at ten locations. Subsequently, we noticed that whereas the MESA results are correct, there was a slight error in the program part of the Multiple Regression Analysis. Hence, some errors have occurred in the estimates of the *amplitudes* of the various periodicities. We present now revised, correct versions of the Tables 2 and 3 of the earlier communication.

The major difference between the earlier and the present revised version of Table 2 is as follows. This table refers to a spectrum analysis of monthly values. Hence, the annual wave ($T = 12$ months) is expected to be the most prominent periodicity. In the revised table, this is so. In the earlier version, some other periodicities (e.g. $T = 15$ months for Edmonton) showed amplitudes comparable to the annual wave, erroneously.

In Table 3 also, the revised version shows different amplitudes as compared to the earlier version.

In Multiple Regression Analysis (JOHNSTON, 1960; BEVINGTON, 1969), the standard error σ_{r_n} is common to all r_n of any spectra. In the revised versions of Tables 2 and 3, the standard error is now indicated in the last column for spectra of each series.

Since the Burg (MESA) spectra have remained unaltered, Fig. 6 is still valid, qualitatively. Only the *heights* (amplitudes) of some peaks would be altered.

The main conclusions were that the MESA of total ozone data series for 1957–1982 for several locations revealed the semi-annual, annual and Quasi-Biennial Oscillations (QBO) and peaks at 3.5–4, 6–7 and 10–11 years, with an additional peak at about 16 years for the Arosa CC' series (1932–71). These conclusions are still valid.

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REFERENCES

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- JOHNSTON, J. *Econometric Methods* (McGraw-Hill, New York 1960), pp. 134–135.
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Table 2

STATION	Periodicities T_n (months and their Amplitudes r_n (D.U.) for Spectra of <i>Original</i> Data																			Standard error σ_{r_n}			
	T_n	r_n	3.5	3.7				6.0	7.5	8.6		10.1	11.9		15.5	20	22	41	91				
Edmonton	T_n	r_n	2.6	2.7				4.8	2.2	3.2		2.5	51.9		2.1	4.1	1.8	2.2	2.6	±2.0			
Arosa (AD)	T_n	r_n	4.5	4.8	5.1		6.0					12.0	13.7			20	29	43	72	114			
	r_n		2.6	3.3	3.2	6.4						46.1	3.4			2.7	3.9	4.4	2.6	±1.1			
Tateno	T_n	r_n					6.0					12.0	14.5	16.0	18.8			34	45	81	117		
	r_n						3.1					43.4	3.5	2.4	3.7			4.4	2.9	2.7	±1.0		
Mauna Loa	T_n	r_n	3.9	4.0	4.2	5.1		7.1	7.7	8.3	9.6	10.6	12.0	13.0	15.1	18.6	21	28	34	52	72	72	
	r_n		1.3	1.6	1.1	0.7	5.7	1.2	1.8	2.3	1.9	1.3	17.0	1.1	2.7	2.6	3.8	5.0	3.1	2.9	1.0	±0.8	
Kodaikanal	T_n	r_n	4.0				6.0		8.7	9.3	10.1	11.0	12.0	14.3			21	23	29	47	84	106	
	r_n		1.1				3.6	1.0	1.0	1.0	1.2	1.4	15.8	1.5		0.5	1.6	4.9	4.0	3.4	0.8	±0.9	
Huancayo	T_n	r_n	2.9				6.0	6.7	7.9				11.9			17.2	23	32	39	66			
	r_n		0.5				1.5	0.9	0.9				5.5			1.2	1.9	2.2	1.2	3.0		±0.5	
Brisbane	T_n	r_n	3.8	4.1		5.4	6.0	6.4	6.8	8.2	8.6	9.2	12.0	13.3	15.1	18.4	21	24	28	34	50	81	132
	r_n		1.4	1.2		0.9	3.5	1.1	1.6	0.4	0.9	1.4	21.9	1.7	1.4	1.3	4.3	2.5	4.4	1.0	3.2	5.2	5.0
Buenos Aires	T_n	r_n	3.1	4.6								9.3	12.0	16.4	29	22	27	48			106		
	r_n		1.0	2.0								1.0	24.9		2.9	2.5	4.8	2.2			4.2		±1.3
Aspendale	T_n	r_n	4.0				6.0		8.2				11.9		16.2	21	24	29	45	63	104		
	r_n		1.9				4.0		1.6				35.2		1.7	4.8	5.3	4.9	2.6	4.3	2.1		±1.2
Mac Quaire Isl.	T_n	r_n	3.3	4.0	4.6		6.0	6.9	7.4	9.1	10.2	11.9	13.8		18.2	20	28	50			129		
	r_n		2.8	6.1	3.2		14.0	5.0	5.1	7.0	7.0	44.8	5.5		3.6	5.6	7.9	5.5			4.5		±1.9
(in years)			1/4				1/2					1					2	4			7		11