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ERRATUM

Erratum to: On the Characterisations of a New Class of Strong Uniqueness Polynomials Generating Unique Range Sets

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In the proof of Lemma 2.6 **Case 2** has to be replaced as follows.

Case 2 Let $A = \omega^l$ for some l such that $0 \le l \le m-1$. Then also $F(t_0) = 0 = F^{'}(t_0)$ implies $e^{nt_0} = A$ and $e^{mt_0} = 1$. Now, if possible, suppose that there exist more than one t_0 such that $e^{mt_0} = 1$ and $e^{nt_0} = A$, i.e., there exist t_{0p}, t_{0q} with $e^{t_{0p}} \ne e^{t_{0q}}$ such that $e^{mt_{0p}} = 1 = e^{mt_{0q}}$ and $e^{nt_{0p}} = A = e^{nt_{0q}}$, i.e., $e^{m(t_{0p}-t_{0q})} = 1$ and $e^{n(t_{0p}-t_{0q})} = 1$, i.e., $m(t_{0p} - t_{0q}) = 2k_1\pi i$ for some $k_1 \in \mathbb{Z}$ and $n(t_{0p} - t_{0q}) = 2k_2\pi i$ for some $k_2 \in \mathbb{Z}$. Since $\gcd(m, n) = 1$, so there exists $x, y \in \mathbb{Z}$ such that $mx + ny = 1$, i.e., $m(t_{0p} - t_{0q})x + n(t_{0p} - t_{0q})y = (t_{0p} - t_{0q})$, i.e., $2k_1\pi i x + 2k_2\pi i y = (t_{0p} - t_{0q})$, i.e., $2\pi i(xk_1 + yk_2) = (t_{0p} - t_{0q})$, i.e., $2s\pi i = (t_{0p} - t_{0q})$, where $s = xk_1 + yk_2 \in \mathbb{Z}$.

Therefore $e^{t_{0p}} = e^{t_{oq}}$, which is a contradiction to $e^{t_{0p}} \ne e^{t_{0q}}$. Therefore $\phi(e^t)$, hence $\phi(z)$, has exactly one multiple zero ω^j, where $0 \le j \le m-1$ and $\omega^{mj} = 1$, $\omega^{nj} = \omega^l$ and that is of multiplicity 4. Now in particular if $A = 1$, then we have ω^j is the multiple zero of $\phi(z)$ for some $j \in \{0, 1, \ldots, m-1\}$ such that $\omega^{mj} = 1$ and $\omega^{nj} = 1$ i.e., $\omega^j = 1$ as $\gcd(m, n) = 1$.

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