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ERRATUM TO "MINIMAL PERIODS OF HOLOMORPHIC MAPS ON COMPLEX TORI" [J. DIFFERENCE EQU. APPL. 18 (2012) 2059-2068]

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In [1] we studied the minimal periods of holomorphic maps on complex tori. In particular, we gave complete answers in dimensions one and two and outlined an algorithm for higher dimensions. However, due to two simple calculation mistakes in the proof of [1, Theorem 4], there were two subcases omitted in its statement.

On [1, pg. 2064], in the case $p = 2$ and $q = 1$, we should have $(\alpha_1, \beta_1) = (\alpha_2, \beta_2) = (\frac{1}{2}, \pm\frac{\sqrt{3}}{2})$. Then $N(f^m)$ is periodic as $\{1, 9, 16, 9, 1, 0, \cdots\}$. Thus $\mathrm{HPer}(f) = \{1, 2, 3\}$, which belongs to case (F4).

On [1, pg. 2065], in the case $p = -2$ and $q = 1$, we should have $(\alpha_1, \beta_1) = (\alpha_2, \beta_2) = (-\frac{1}{2}, \pm\frac{\sqrt{3}}{2})$. Then $N(f^m) = 9$ for all $m \geq 1$. Thus $\mathrm{HPer}(f) = \{1\}$, which belongs to case (F1).

Therefore, the correct statement for miminal periods of holomorphic maps on two-dimensional complex tori should be as follows.

Theorem 1. *Let $f : \mathbb{T}^2 \to \mathbb{T}^2$ be a holomorphic map, and let λ_1, $\bar{\lambda}_1$, λ_2 and $\bar{\lambda}_2$ be the eigenvalues of A_f. Then* $\mathrm{Per}(f)$ *is equal to*

(E) $\emptyset$ *if and only if* $1 \in \{\lambda_1, \lambda_2\}$;
(F1) $\{1\}$ *if and only if* $\{\lambda_1, \lambda_2\}$ *is either* $\{0\}$, *or* $\{-1\}$, *or* $\{e^{i2\pi/3}\}$, *or* $\{-1, 0\}$, *or* $\{0, e^{i2\pi/3}\}$, *or* $\{e^{i4\pi/5}, e^{i2\pi/5}\}$, *or* $\{-1, e^{i\pi/2}\}$, *or* $\{-1, e^{i2\pi/3}\}$;
(F2) $\{1, 2\}$ *if and only if* $\{\lambda_1, \lambda_2\}$ *is either* $\{e^{i\pi/2}\}$, *or* $\{0, e^{i\pi/2}\}$, *or* $\{e^{i2\pi/3}, e^{i\pi/2}\}$;
(F3) $\{1, 3\}$ *if and only if* $\{\lambda_1, \lambda_2\} = \{-1, e^{i\pi/3}\}$;
(F4) $\{1, 2, 3\}$ *if and only if* $\{\lambda_1, \lambda_2\}$ *is either* $\{e^{i\pi/3}\}$, *or* $\{0, e^{i\pi/3}\}$, *or* $\{e^{i\pi/2}, e^{i\pi/3}\}$, *or* $\{e^{i\pi/3}, e^{i2\pi/3}\}$;
(F5) $\{1, 2, 4\}$ *if and only if* $\{\lambda_1, \lambda_2\} = \{e^{i\pi/4}, e^{i3\pi/4}\}$;
(F6) $\{1, 2, 5\}$ *if and only if* $\{\lambda_1, \lambda_2\} = \{e^{i\pi/5}, e^{i3\pi/5}\}$;
(F7) $\{1, 2, 3, 6\}$ *if and only if* $\{\lambda_1, \lambda_2\} = \{e^{i\pi/6}, e^{i5\pi/6}\}$;
(G) *infinite otherwise.*

References

[1] J. Llibre, F. Rong; *Minimal periods of holomorphic maps on complex tori*, J. Difference Equ. Appl. **18** (2012), 2059-2068.

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