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CORRECTION TO THE PAPER "ON COMPLEX ANALYTIC PROPERTIES OF LIMIT SETS AND JULIA SETS"

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Unfortunately in [3], the proof of Theorem 1.1 (A) contain inadequate arguments. We will give the corrected one below. On the other hand, the referee of the present paper shows an alternative and short proof of our main discussion. We also will present the proof at the end of the paper. The author thanks the referee for the proof.

Theorem 1.1 (A). *Suppose that Γ is a Fuchsian group of the second kind. If $\zeta \in \Lambda(\Gamma)$ is a parabolic fixed point of Γ, then $\Delta(\zeta)$ contains exactly two minimal boundary points. On the other hand, if ζ is a conical limit point, then $\Delta(\zeta)$ consists of a single minimal point. Furthermore, if Γ is a Schottky group, then the Martin compactification $\Omega(\Gamma)^*$ is homeomorphic to the Riemann sphere $\hat{\mathbf{C}}$.*

Proof of Theorem 1.1 (A). Let Γ be a Fuchsian group of the second kind. The limit set $\Lambda(\Gamma)$ is a Cantor set. Hence, it is nowhere dense on $\mathbf{R}$.

For a parabolic fixed point of Γ, the proof in [3] works and we see that there exist exactly two minimal points over the point.

Now, we consider a conical limit point $\zeta \in \Lambda(\Gamma)$. If ζ is an irregular point of the Dirichlet problem on $\Omega(\Gamma)$, then $\dim \Delta(\zeta) = 1$ from [3] Proposition 2.2. So, there is nothing to prove and we assume that ζ is a regular point of the Dirichlet problem on $\Omega(\Gamma)$.

We may assume that $\zeta = 0$. By definition, there exists a sequence $\{\gamma_n\}_{n=1}^{\infty}$ in Γ and a cone

$$S = \left\{ z \in \mathbf{H} \,\middle|\, \frac{\pi}{2} - \phi < \arg z < \frac{\pi}{2} + \phi \right\}$$

for some ϕ $\left(0 < \phi < \dfrac{\pi}{2}\right)$ such that $\gamma_n(i) \in S$ $(n = 1, 2, \ldots)$ and $\lim_{n \to \infty} \gamma_n(i) = 0$.

Consider a constant $M > 1$ and fix it. Suppose that $\{\gamma_n(i)\}_{n=1}^{\infty}$ contains infinitely many $n \in \mathbf{N}$ with $\operatorname{Re} \gamma_n(i) \geq 0$. Then, by taking a subsequence if

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