CORRECTION TO MY PAPER

"INTRINSIC LIPSCHITZ CLASSES ON MANIFOLDS WITH APPLICATIONS
TO COMPLEX FUNCTION THEORY AND ESTIMATES FOR THE $\bar{\partial}$ AND $\bar{\partial}_b$ EQUATIONS"

by Steven G. Krantz

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All of the results of this paper are true as stated. However, in some cases they do not necessarily follow from the techniques of the present paper. We will correct these omissions and also we will correct some misprints.

1) In Theorem 6.6, the correct hypothesis is that

$$\|\text{Pf}(\gamma_\xi(X_j, \cdot))\|_{\Lambda_{\alpha-\ell}((- \varepsilon_\xi, \varepsilon_\xi))} \leq C < \infty,$$

$$\|\text{Pf}(\gamma_\xi(Y_j, \cdot))\|_{\Lambda_{\alpha-\ell}((- \varepsilon_\xi, \varepsilon_\xi))} \leq C < \infty,$$

some universal $C > 0$ and $(- \varepsilon_\xi, \varepsilon_\xi) \subseteq \mathbb{R}$ depending on ξ .

2) While Theorem 7.2 is correct, it by no means follows from the techniques of the paper in question. We should have defined $T_\alpha(\mathcal{E})$ to be the set of all bounded functions in $\mathcal{E}$ which satisfy the hypotheses of Theorem 6.6 uniformly on each manifold

$$M_\varepsilon = \{z \in \mathcal{E} : \text{dist}(z, b\mathcal{E}) = \varepsilon\}, \quad \varepsilon \text{ small}.$$

That this definition is equivalent with the one given in the paper follows from results of [A] below. The reader should also refer to [5], where some results which imply this equivalence appear.

3) The proof of Theorem 7.5 is incorrect as presented. Line (7.6.1) does not follow from the Cauchy Riemann equations (it does however follow from the pluriharmonicity of f — the proof is much like that of Theorem 7.1 appearing in [6]). We instead offer the following corrected proof:

Omit line (7.6.1). Write $f(w) - f(v) = A + B + D$, just as in line 7.6.2. We estimate A and D using 4.2 (not 7.6.1) just as is stated. To estimate B we need the following idea. Choose a point $u_1 \in \mathcal{D}$ and curves γ, γ^* such that

$$(a) \quad |u_1 - w_1| \leq C\varepsilon$$

$$(b) \quad \gamma(0) = w_1, \quad \gamma(1) = u_1$$

- (c) $\dot{\gamma}(t)$ is real or complex normal for each $t \in [0,1]$
- (d) $|u_1 - v_1| \leq C\varepsilon$
- (e) $\gamma^*(0) = u_1$, $\gamma^*(1) = v_1$
- (f) $\dot{\gamma}^*(t)$ is complex tangential for each $t \in [0,1]$.

Then

$$B \leq |f(w_1) - f(u_1)| + |f(u_1) - f(v_1)| \equiv T_1 + T_2.$$

Now

$$\begin{aligned} T_1 &\leq C_\varepsilon \int_0^1 |\text{grad}_n f(\gamma(t))| dt \\ &\leq C_\varepsilon \cdot \varepsilon^{\alpha-1} = C_\varepsilon^\alpha \end{aligned}$$

where grad_n is the normal component of the gradient. Also

$$\begin{aligned} T_2 &\leq C_\varepsilon \int_0^1 |\text{grad}_t f(\gamma^*(t))| dt \\ &\leq C_\varepsilon \cdot \varepsilon^{-1/2} = C_\varepsilon^{1/2} \quad (\text{by 7.5}). \end{aligned}$$

where grad_t is the complex tangential component of the gradient. It now follows that $f \in \Lambda_\eta$, $\eta = \min(\alpha, 1/2)$, so $f \in \Gamma_{\alpha, 2\alpha}$. If $1/2 < \alpha < 1$, the above argument yields only $f \in \Gamma_{1/2, 1}$. But then the argument used to prove 7.5 shows that $|\partial/\partial\omega f(z)| \leq C_\mu \delta(z)^{-\mu}$, any $\mu > 0$, $\omega \in \mathcal{J}$. Therefore, when we estimate B , we obtain

$$|B| \leq C'_\mu \varepsilon^{\min(\alpha, 1-\mu)}.$$

Letting $\mu = 1 - \alpha$ yields the desired result.

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REFERENCES

- A. S.G. KRANTZ, Finite Type Conditions and Elliptic Boundary value Problems, Jour. Diff. Eq., to appear.

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