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Correction to: A Characterization of the Poisson Kernel Associated with $SU(1,n)$

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In Corollary 6 (iii), which appears in page 45 of the paper above, the numerator in the right hand side of the second equation should be equal to 4 instead of 2. As a consequence the numerators $2(2n^2-9n+1)$ and $4n(6n^2+5n-5)$ in (21) must be changed into $-2(n^2+3n+2)$ and $8n(3n^2+n-1)$ respectively, and then the equation below (24) into $A=\bar{A}$. Therefore, the argument in p. 51 that deduces (8d) collapses. We replace it as follows.

Let F be a real valued, C^2 function on G/K satisfying $F(0)=1$ and (2a), (2b), (2c) in Lemma 1. We here put $[F](g)=\int_M f(mg)dm$ $(g\in G)$ and $R=F-[F]$. Then $[F]$ satisfies $[F](0)=1$, (2a) and (2c), and R satisfies $R(0)=0$, (2a) and $(\partial R/\partial\zeta_i)(0)=0$ $(1\le i\le n)$. Especially, if we denote by $[F]=\sum_{N=0}^{\infty}[F]_N$ (resp. $R=\sum_{N=0}^{\infty}R_N$) a homogeneous expansion of $[F]$ (resp. R) with respect to $\zeta_1,\bar{\zeta}_1,\zeta_2,\bar{\zeta}_2,\cdots,\zeta_n,\bar{\zeta}_n$, we see that

(1a) $$[F]_0=1\,,\qquad [F]_1=n(\zeta_1+\bar{\zeta}_1)\,,$$

(1b) $$R_0=R_1=0\,.$$

Since $P(\zeta)=P(\zeta,e_1)$ and $[F]$ are M-invariant eigenfunctions of D, it follows from Proposition 7 that they have expansions of the forms:

(2a) $$P(\zeta)=\sum_{p,q\ge 0}P_{pq}(r)\phi_{pq}(\dot{\zeta})=\sum_{p,q\ge 0}Q_{pq}^0(r)\zeta_1^p\bar{\zeta}_1^q\,,$$

(2b) $$[F](\zeta)=\sum_{p,q\ge 0}C_{pq}P_{pq}(r)\phi_{pq}(\dot{\zeta})=\sum_{p,q\ge 0}Q_{pq}(r)\zeta_1^p\bar{\zeta}_1^q\,,$$

where $r^2=|\zeta|^2$, $\dot{\zeta}=\zeta/r$, $C_{pq}\in \mathbf{C}$ and ϕ_{pq} is a spherical harmonic on K/M (see [1], p. 144). Since $\phi_{00}(\zeta)=1$, $\phi_{10}(\zeta)=\zeta_1$ and $\phi_{01}(\zeta)=\bar{\zeta}_1$, it follows from (1a) that

(3a) $$Q_{00}=Q_{00}^0=(1-r^2)^n\,,$$

(3b) $$Q_{10}=Q_{01}=Q_{10}^0=Q_{01}^0=(1-r^2)^n n\,.$$

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