Table of Notation

Notation	Section	Definition
D	1.1	The unit disc in the plane
Ω	1.1	A domain
dV	1.1	The volume element
$H^\infty(\Omega)$	1.1	Bounded holomorphic functions on Ω
$A(\Omega)$	1.1	Functions holomorphic on Ω, continuous on the closure
$A^2(\Omega)$	1.1	Square integrable holomorphic functions on Ω (the Bergman space)
C^k	1.1	The k-times continuously differentiable functions
$\\|\ \\|_{A^2(\Omega)}$	1.1	The Bergman norm
$K(z,\zeta) = K_\Omega(z,\zeta)$	1.1	The Bergman kernel
$\{\phi_j\}$	1.1	A complete orthonormal basis
P	1.1	The Bergman projection
$J_{\mathbb{C}}(f)$	1.1	The complex Jacobian matrix of f
$J_{\mathbb{R}}(f)$	1.1	The real Jacobian matrix of f
$g_{i,j}(z)$	1.1	The Bergman metric
$\vert\xi\vert_{B,z}$	1.1	The Bergman metric
$\ell(\gamma)$	1.1	The Bergman length of γ
$d_\Omega(z,w)$	1.1	The Bergman distance of z to w
$\Gamma(z)$	1.1	Euler's gamma function
$\Gamma(\zeta,z)$	1.1	Fundamental solution for the Laplacian
dA	1.1	The area element
$G(\zeta,z)$	1.1	The Green's function
$S(z,\zeta)$	1.2	The Szegő kernel
$\eta(z)$	1.2	The Leray form
$\bar\partial$	1.2	The Cauchy–Riemann operator
$S(z,\zeta)$	1.2	The Szegő projection
$\mathcal{P}(z,\zeta)$	1.2	The Poisson–Szegő kernel
δ_Z	1.2	The Dirac delta mass
N	1.2	The $\bar\partial$-Neumann operator

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Notation	Section	Definition
$H^2(\Omega)$	1.2	The square-integrable Hardy space
$\mathcal{H}$	1.3	A Hilbert space with reproducing kernel
$K(x, y)$	1.3	A reproducing kernel
$\mathbf{h}^2(D)$	1.6	The square-integrable harmonic functions
$\mathbb{Z}^+$	1.7	The nonnegative integers
A	1.8	An annulus
$d\sigma$	1.9	Area measure on the boundary of the ball
W^s	1.11	The Sobolev space
$\mathcal{U}_\epsilon^k(\Omega_0)$	2.1	Domains neighboring Ω_0
$\sim$	2.1	Is biholomorphic to
$\mathrm{Aut}(\Omega)$	2.1	The automorphism group of Ω
$\bar{\partial}^*$	2.1	The adjoint of $\bar{\partial}$
Condition R	2.1	A regularity condition for the Bergman projection
$\bigwedge^{0,j}$	2.1	Differential forms
$WH^j(\Omega)$	2.1	$W^j(\Omega) \cap$ (holomorphic functions)
$WH^\infty(\Omega)$	2.1	$W^\infty \cap$ (holomorphic functions)
$W_0^j(\Omega)$	2.1	The W^j closure of $C_c^\infty(\Omega)$
$\partial/\partial\nu_P$	2.1	The outward normal derivative at P
b_j^i	3.1	Bergman representative coordinates
$\bar{\partial}_b$	3.3	The boundary Cauchy–Riemann operator
$\mathcal{B}(z, \zeta)$	3.3	The Poisson–Bergman kernel
$\Lambda f(w, x)$	3.3	The Berezin transform
$\beta_2(z, r)$	3.3	Nonisotropic ball
$\mathcal{M} f(z)$	3.3	Maximal operator
$\mathcal{A}_\alpha(z)$	3.3	Admissible approach region
$\mathcal{L}$	3.5	Laplace–Beltrami operator
$\rho(z, \zeta)$	3.6	A nonisotropic metric on B
$\mathcal{P}_k$	4.1	All homogeneous polynomials of degree k
$\mathcal{A}_k$	4.1	Kernel of the Laplacian in $\mathcal{P}_k$
$\mathcal{B}_k$	4.1	Image of the Laplacian in $\mathcal{P}_k$
$\mathcal{H}_k$	4.1	The spherical harmonics
$Z_{x'}^{(k)}$	4.2	Zonal harmonic
$P(x, t')$	4.2	The Poisson kernel
$P_k^\lambda(t)$	4.2	Gegenbauer polynomial
$\mathcal{H}^{p,q}$	4.3	Harmonic polynomials of bidegree (p, q)
$Q(f, g)$	4.4	Cauchy–Riemann inner product
$[L, M]$	5.3	First-order commutator
$v(\phi)$	5.3	The order of vanishing of ϕ
$\mathcal{H}$	5.7	Hausdorff distance on domains
$A^2(M)$	5.9	The Bergman space on a manifold
ds^2	5.9	The Bergman metric on a manifold
$\mathcal{W}$	6.1	The Diederich–Fornæss worm domain
η	6.1	Function used to construct the worm
$\mathcal{A}$	6.2	Singular annulus in the worm
$B_\Omega^K(q, r)$	7.2	Kobayashi distance ball
$S_\Omega(p; \xi)$	7.3	Holomorphic sectional curvature

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