Lipschitz continuity for harmonic functions and solutions of the $\bar{\alpha}$-Poisson equation

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We study Lipschitz continuity for harmonic functions, gradient harmonic functions and solutions of the $\bar{\alpha}$-Poisson equation in planar case and several variables. We also review some recently obtained results. It turns out that the gradients of hyperbolic harmonic functions behave differently from those of euclidean harmonic functions. A similar conclusion is obtained for the family of T_α-harmonic functions. Namely, unlike the space of harmonic functions, the solution of the Dirichlet problem in the space of T_α-harmonic functions is shown to be Lipschitz-continuous when so is the boundary function, for $\alpha > 0$.

References

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