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Section:

10. Partial Differential Equations

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Non–linear Balayage and Applications

Some properties of non–linear potentials as consequences of the form of certain metric projections are developed. Non–negative potentials on R^N are potentials of non–negative Radon measures on R^N. We prove that capacity zero sets are subsets of *poles* of non–linear potentials, that the set of non–linear potentials while not necessarily convex is necessarily complete etc. Those are conterparts of results for Classical Potential theory. The non–linear potential theory is used to derive the form of tangent cones for a class of convex sets in Besov spaces $B^{p,q}_{\alpha}$.