Boundary regularity of Dirichlet minimizing Q-valued functions

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Abstract. We prove Hölder continuity at the boundary for Dirichlet mimizing Q-valued functions. Almgren introduced multivalued/Q-valued functions to study regularity of minimal surfaces in higher codimension. The Hölder continuity in the interior for Dirichlet minimizers is an outcome of Almgren's original theory [2], to which the work of C. De Lellis and E. N. Spadaro has given a simpler alternative approach [7]. We extend the Hölder regularity for Dirichlet minimizing Q-valued functions up to the boundary assuming C^1 regularity of the domain and $C^{0,\alpha}$ regularity of the boundary data with $\alpha > \frac{1}{2}$.