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Dirichlet's Problem and Complex Lightning Bolts

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Abstract. We consider the Dirichlet problem in the plane with entire data on algebraic curves. More specifically we will be interested in where singularities develop when a solution is continued analytically. Our approach relies on the annihilator method from functional analysis. The annihilating measures are supported on finite sets called lightning bolts.

Keywords. Entire data, algebraic curve, lightning bolt, singularity, analytic continuation, approximation by superpositions.

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