

Study conformal mappings, Dirichle problem (Lavrentiev book)

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Let C be a curve with pieces (arcs) C_α . (e.g. polygon)

Let $f = f(t)$ be a function on C , which has jumps. Let D_i be internal points of arcs C_α , where f has a jump. Let A_i be vertices A_α : the arc C_α goes from the vertex A_α to the vertex $A_{\alpha+1}$. Note that at vertices we have a jump of angles: at the vertex A_α the jump

$$\delta\varphi_\alpha = \varphi_\alpha^{(+)} - \varphi_\alpha^{(-)}.$$

Let $F(z)$ be function with jumpes h_k at the points D_k , where curve is smooth and with jumps H_α at the vertices A_α

Consider (with lavrentiev-Shabad) the new function

$$\tilde{F}(z) = F(z) + \frac{1}{\pi} \sum_k \arg(z - D_k) - \sum_\alpha \frac{H_\alpha}{\delta\varphi_a} \arg(z - A_\alpha)$$

This function has no jumps.