

STRONG APPROXIMATE CONTINUITY PROPERTIES OF CERTAIN CONJUGATE FUNCTIONS

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ABSTRACT

The conjugate function $\tilde{F}(x) = -\lim_{\eta \rightarrow 0} \frac{1}{2\pi} \int_{\eta}^{\pi} [F(x+t) - F(x-t)] \cot \frac{t}{2} dt$ of an integrable and 2π -periodic function F exists finitely for almost all x . As our principal result we prove here that if $\tilde{F}(0)$ is finite and F is monotonic in some neighbourhood of 0, then \tilde{F} satisfies strong continuity-type properties at 0. Using an auxiliary result concerning the existence of tangential limits for the Poisson integral, we derive some consequences of our main theorem for the boundary behaviour of analytic and univalent functions.