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ON SOME FINITE DIFFERENCE BOUNDARY PROPERTIES OF CONFORMAL MAPPING

Suppose that a simply connected domain in the complex plane bounded by a smooth Jordan curve is given. Consider the angle between the tangent to the curve and the positive real axis as the function of the arc length on the curve. Let this function be characterized by integral modulus of smoothness.

We consider integral modulus of smoothness introduced by P. M. Tamrazov in 1977. He defined integral moduli of smoothness as averaging on arbitrary measure on the curve of the respective local moduli of smoothness. Difference between these moduli and traditional integral moduli of smoothness, introduced as the least upper bound of averaging absolute values of finite differences, is that the operators of averaging and taking of least upper bound are applied in reverse order.

Suppose that a homeomorphism of the closed unit disk onto the closure of the considered domain conformal in the open unit disk is given.

Estimates for the derivatives of the function realizing conformal mapping formulated for integral moduli of smoothness of arbitrary order are established.