
Zbl 113.05503
Erdős, Pál; Piranian, G.
Restricted cluster sets (In English)
Math. Nachr. 22, 155-158 (1960). [0025-584X]

Let f be a complex-valued function in the upper half plane H, x a point on the real axis, $C(f,x)$ the (ordinary) cluster set of f at x, Δ_x a triangle completely lying in H except for its vertex at x, and $C(f,x,\Delta_x)$ the cluster set of f at x obtained along Δ_x. Independently of *E.F.Collingwood* [Proc. Natl. Acad. Sci. USA 46, 1236- 1242 (1960; Zbl 142.04401)], the authors obtain the same result that there exists a residual set of x for which $\cap_{\Delta_x} C(f,x,\Delta_x) = C(f,x)$. Secondly, given a set E of first category on the real axis, the existence of f in H having the following properties is shown:

$$\cup_{\Delta_x} C(f,x,\Delta_x) = \{0\}$$

for each $x \in E$ and $C(f,x)$ is identical to the extended plane for each x. Finally the authors extend a result of *F.Bagemihl, G.Piranian* and *G.S.Young* [Bul. Inst. Politehn. Iaşi, n. Ser. 5, 29-34 (1959; Zbl 144.33203)] according to which there exists a function in H with the property that each x is the endpoint of three segments L_j such that the cluster sets along them have no point in common. A correction to the proof of Theorem 2 is given in MR 23.A1041 (1962).

M.Ohtsuka

Classification:
28-99 Measure and integration