

Maliszewski, Aleksander

Averages of quasi-continuous functions. (English) Zbl 0936.26001
Math. Bohem. 124, No. 1, 29-34 (1999).

The author proves the following result: Let \mathcal{F} be one of the following classes of functions from \mathbb{R} to \mathbb{R} : all cliquish functions, Lebesgue measurable cliquish functions, cliquish functions in Baire class α ($\alpha \geq 1$), and suppose $f_1, \dots, f_k \in \mathcal{F}$. Then the following properties are equivalent:

- (a) there is a positive function g such that $f_1 + g, \dots, f_k + g$ are quasi-continuous,
- (b) there is a positive function $g \in \mathcal{F}$ such that $\mathcal{C}(g) \supset \bigcap_{i=1}^k \mathcal{C}(f_i)$ and $f_1 + g, \dots, f_k + g$ are quasi-continuous ($\mathcal{C}(f)$ denotes the set of points of continuity of f),
- (c) for each $x \in \mathbb{R}$ and each $i = 1, \dots, k$ we have

$$\liminf_{t \rightarrow x, t \in \mathcal{C}(f_i)} f_i(t) < \infty.$$

A similar result concerning Darboux quasi-continuous functions instead of quasi-continuous ones is also presented.

Reviewer: [M.Zelený \(Praha\)](#)

MSC:

- 26A15** Continuity and related questions (modulus of continuity, semicontinuity, discontinuities, etc.) for real functions in one variable
- 54C08** Weak and generalized continuity

Keywords:

cliquishness; quasi-continuity; Darboux property; comparable functions; average of functions

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