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ON DARBOUX FUNCTIONS IN HONORARY BAIRE CLASS 2

SUMMARY. Professor R. J. O'Malley (1977) introduced and developed the idea of selective differentiation theory. He proved that each selective derivative is a Darboux function ($\mathfrak{D}$) and belongs to the honorary Baire class 2 ($\mathcal{HB}_2$). (We say that $f \in \mathcal{HB}_2$ if there is a function $g \in \mathcal{B}_1$ such that the set $\{x : f(x) \neq g(x)\}$ is at most countable.) Thus, it seems natural to investigate the class $\mathfrak{DHB}_2 \equiv \mathfrak{D} \cap \mathcal{HB}_2$, because this class plays the same role for selective derivatives that the class $\mathfrak{DB}_1$ does for ordinary derivatives.

In the work discussed here we have proved that $\mathfrak{DHB}_2$ is a proper subclass of the class of all pointwise discontinuous functions, it is not closed under uniform convergence, and the maximal additive class for $\mathfrak{DHB}_2$ is the class of all constant functions.