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Balcar's theorem on supports

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Abstract: In *A theorem on supports in the theory of semisets* [Comment. Math. Univ. Carolinae **14** (1973), no. 1, 1–6] B. Balcar showed that if $\sigma \subseteq D \in M$ is a support, M being an inner model of ZFC, and $\mathcal{P}(D \setminus \sigma) \cap M = r\text{``}\sigma$ with $r \in M$, then r determines a preorder “ \preceq ” of D such that σ becomes a filter on (D, \preceq) generic over M . We show that if the relation r is replaced by a function $\mathcal{P}(D \setminus \sigma) \cap M = f_{-1}(\sigma)$, then there exists an equivalence relation “ \sim ” on D and a partial order on D/\sim such that D/\sim is a complete Boolean algebra, σ/\sim is a generic filter and $[f(u)]_{\sim} = -\sum(u/\sim)$ for any $u \subseteq D$, $u \in M$.

Keywords: inner model; support; generic filter

AMS Subject Classification: 03E40

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