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Valuations of lines

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Abstract: We enlarge the problem of valuations of triads on so called lines. A line in an e-structure $\mathbb{A} = \langle A, F, E\rangle$ (it means that $\langle A, F\rangle$ is a semigroup and E is an automorphism or an antiautomorphism on $\langle A, F\rangle$ such that $E \circ E = \mathbf{Id} \restriction A$) is, generally, a sequence $\mathbb{A} \restriction B$, $\mathbb{A} \restriction U_c$, $c \in \mathbf{FZ}$ (where $\mathbf{FZ}$ is the class of finite integers) of substructures of $\mathbb{A}$ such that $B \subseteq U_c \subseteq U_d$ holds for each $c \leq d$. We denote this line as $\mathbb{A}(U_c, B)_{c\in\mathbf{FZ}}$ and we say that a mapping H is a valuation of the line $\mathbb{A}(U_c, B)_{c\in\mathbf{FZ}}$ in a line $\hat{\mathbb{A}}(\hat{U}_c, \hat{B})_{c\in\mathbf{FZ}}$ if it is, for each $c \in \mathbf{FZ}$, a valuation of the triad $\mathbb{A}(U_c, B)$ in $\hat{\mathbb{A}}(\hat{U}_c, \hat{B})$. Some theorems on an existence of a valuation of a given line in another one are presented and some examples concerning equivalences and ideals are discussed. A generalization of the metrization theorem is presented, too.

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