Variations on effect algebras

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ABSTRACT

The aim of the present paper is to introduce and investigate the variations of (non-additive) functions defined on effect algebras. The notion of the variation of a general function is introduced on an effect algebra \$L\$ and it is proved that it always exists, but in general case it is not unique; the notions of orthogonal variation \$\overline{m},\$ chain variation \$\mu\seta\$ and inclusion variation \$|m|_i\$ of a real-valued function \$m\$ defined on \$L\$ are introduced and its properties are discussed elaborately. Finally, it is also proved that the orthogonal variation \$\overline \{m\}\\$ of a modular measure \\$m\\$ defined on a \\$\sigma\\$-complete \\$D\\$-lattice \\$L\\$ is the smallest variation on \$L\$.