

The Song-Guo property for idempotents cannot be extended to tripotents

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The Song-Guo property is: *equivalent idempotents are also conjugate*.

Question. Can we extend this result for tripotents ?

The answer is NO. Take any nonzero idempotent e , which is equivalent to $-e = (-1)e(1)$.

However, e is not conjugate to $-e$, since conjugate of idempotents are idempotents (and $-e$ is not).

Notice that negatives of idempotents are tripotents.