

Abstract Submitted
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Nonassociative decomposition of angular momentum operator using complex octonions JENS KOEPLINGER, 105 E Avondale, Greensboro, NC 27403, USA, VLADIMIR DZHUNUSHALIEV, Dept. Phys. and Microel. Engineer., Kyrgyz-Russian Slavic University, Bishkek, Kyrgyz Republic — Non-associative octonion algebra has been proposed [e.g. V. Dzhunushaliev, J. Math. Phys. 49, 042108 (2008); arXiv:0712.1647] for description of a hidden structure in operator quantum mechanics, which contains traditional observables, as well as unobservable quantities that cannot be measured in principle. The approach allows to decompose the supersymmetric momentum operator, and also the angular momentum operator, as a bilinear combination of some (non-associative) operators [V. Dzhunushaliev, arXiv:0805.3221]. This talk presents the finding of a linear decomposition of the angular momentum operator, with use of complex octonion numbers. Potential implications and next steps will be outlined.

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