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Nonassociative algebra structures on $sl(2)$ -modules.

The irreducible $sl(2)$ -module $V=V(n)$ with $n=6 \pmod{4}$ occurs in its exterior square along with the adjoint representation with multiplicity 1. By projecting the exterior square of V onto itself and onto the adjoint representation, we may define a binary-ternary structure on V . We will describe how computer algebra was implemented to determine the polynomial identities satisfied by this structure for $V(6)$, $V(10)$, $V(14)$, and $V(18)$ in degrees less than or equal to 7. This is joint work with Murray Bremner. (Received March 30, 2010)