A simple approach to n-ary Loday algebras

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The Loday-type n-ary algebras have been introduced recently for specific cases. For generic binary algebras P. Kolesnikov and A.P.Pozhidaev provided a construction (K-P construction), which was followed by an algorithm by M.R. Bremner, R. Felipe, and J. Sanchez-Ortega that implements such a construction, as it was proven later by P. Kolesnikov and V. Yu. Voronin.

In a previous work, we have devised a further construction proved to generate varieties equivalent to the K-P construction using bimodules over varieties of algebras. We extend here this construction to n-ary algebras and provide multiple examples: Jordan and Lie Triple disystems, Casas-Loday-Pirashvili n-ary Leibniz algebras.

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