Hahn multiple orthogonal polynomials of type I

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Explicit expressions for the Hahn multiple polynomials of type I, in terms of Kampé de Fériet hypergeometric series, are given. Orthogonal and biorthogonal relations are proven. Then, part of the Askey scheme for multiple orthogonal polynomials type I is completed. In particular, explicit expressions in terms of generalized hypergeometric series and Kampé de Fériet hypergeometric series, are given for the multiple orthogonal polynomials of type I for the Jacobi-Piñeiro, Meixner I, Meixner II, Kravchuk, Laguerre I, Laguerre II and Charlier families.

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