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LEONARD PAIRS FROM THE EQUITABLE BASIS OF sl_2[*]

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Abstract. We construct Leonard pairs from finite-dimensional irreducible sl_2-modules, using the equitable basis for sl_2. We show that our construction yields all Leonard pairs of Racah, Hahn, dual Hahn, and Krawtchouk type, and no other types of Leonard pairs.

Key words. Lie algebra, Racah polynomials, Hahn polynomials, Dual Hahn polynomials, Krawtchouk polynomials.

AMS subject classifications. 17B10, 05E35, 33C45.

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