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A FAMILY OF TRIDIAGONAL PAIRS RELATED TO THE QUANTUM AFFINE ALGEBRA $\mathbf{U}_q(\widehat{sl_2})^*$

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Abstract. A type of tridiagonal pair is considered, said to be mild of q-Serre type. It is shown that these tridiagonal pairs induce the structure of a quantum affine algebra $U_q(\widehat{sl_2})$-module on their underlying vector space. This is done by presenting an explicit basis for the underlying vector space and describing the $U_q(\widehat{sl_2})$-action on that basis.

Key words. Leonard pair, Tridiagonal pair, Quantum affine algebra.

AMS subject classifications. 20G42, 15A04, 33D80, 05E35, 33C45, 33D45.

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