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Heisenberg double of some quantum group and its representations

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Abstract. Let $\mathfrak{g}, \mathfrak{h}$ be two indecomposable solvable Lie algebras with dimension 5 and special given structure constants. Their quantized universal enveloping algebras are Hopf algebras, and they are the Hopf duals of each other. The Heisenberg double $\mathcal{D}_q$ is the smash product of these two Hopf algebras. In this paper, we study the weight modules, the prime spectrum and the automorphism group of the Heisenberg double $\mathcal{D}_q$.

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