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Lambda_c semileptonic decay including new physics

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We study deviations from the Standard Model in the Lambda_c to Lambda_s semileptonic decay, where lepton flavour universality violation could be observed. We consider generalised dimension-6 semileptonic c to s operators of scalar, pseudoscalar, vector, axial-vector and tensor types. We rely on lattice QCD for the hadronic transition form factors, employing heavy quark spin symmetry (HQSS) to estimate those that have not yet been determined on the lattice. Uncertainties due to the truncation of the new-physics Hamiltonian and different implementations of HQSS are carefully taken into account. As a result, we unravel the new-physics discovery potential of the Lambda_c semileptonic decay in different observables.

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