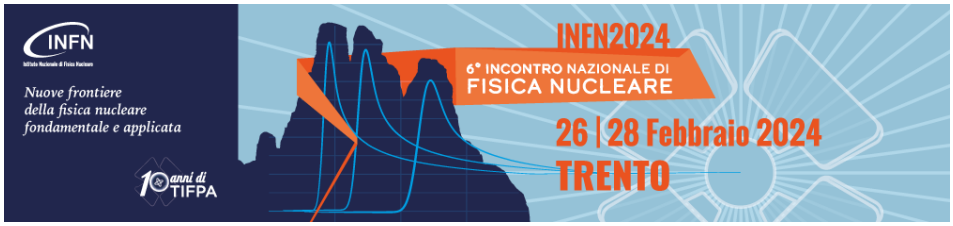

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Mass spectra and electromagnetic decays of single bottom baryons

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The study of the mass spectra as well as the decay properties of single bottom baryons is relevant in hadron physics. Until now, only a few single bottom baryons have been discovered and many of them have to be discovered in the future. In this work, we computed the mass spectra of single bottom baryons within the quark model formalism up to D-wave states. Additionally, we calculated the electromagnetic decay widths from P-wave to ground states. The electromagnetic decays become dominant in cases where the strong decays are suppressed.

The experimental uncertainties are propagated to the model parameters using a Monte Carlo bootstrap method. Our masses are in reasonable agreement with the available data at the moment. For this reason, our results will be able to guide the experimentalists in future searches for the undiscovered single bottom baryons at experiments like the LHCb, ATLAS, and CMS.

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