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# Triply-heavy and heavy-strange baryon spectrum on a quantum computer

by N. Martínez de Arenaza, J. J. Gálvez-Viruet,  
and F. J. Llanes-Estrada

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Plaza de las Ciencias, 1 28040 Madrid, Spain

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UNIVERSIDAD  
COMPLUTENSE  
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## Abstract

We present a computation of triply-heavy baryons on a quantum computer, employing the Cornell quark model in line with the earlier quarkonium work of Gallimore and Liao. These baryons are some of the most interesting Standard Model particles which have not yet been detected, as they bear on the short range (colour) behaviour of the nuclear force. The spectrum here obtained is compatible with predictions from earlier works, with our uncertainty dominated by traditional few-body approximations (size of the variational basis, center of mass recoil, parameter estimation...) and not by the statistical error from the quantum computer (deployed here as a small diagonalizer), which turns out to be negligible respect to the other sources of uncertainty. We have also examined baryons in which some of the heavy quarks are substituted by strange light quarks.

