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## **Computing Hadronic Light by Light Contributions to Muon $g-2$ on Lattice with Physical Pions (15' + 5')**

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The current measurement of muonic  $g - 2$  disagrees with the theoretical calculation by about 3 standard deviations. Hadronic vacuum polarization (HVP) and hadronic light by light (HLbL) are the two types of processes that contribute most to the theoretical uncertainty. The current value for HLbL is still given by a model. In this talk, I will describe results from a first-principles lattice calculation with a physical 139 MeV pion in a box of 5.5 fm extent. Our current numerical strategies, including noise reduction techniques, evaluating the HLbL amplitude at zero external momentum transfer, and important remaining challenges, in particular those associated with finite volume effects, will be discussed.

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