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g-2 on the Lattice

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The muon anomalous magnetic moment, $g-2$, provides a precision test of the Standard Model, which currently shows a discrepancy of about three standard deviations with the E821 experiment at BNL. The leading theory errors correspond to QCD corrections. I review recent lattice QCD calculations of the hadronic vacuum polarization (HVP) and hadronic light-by-light (HLbL) contributions to the muon $g-2$ by the RBC and UKQCD collaborations. Both are computed with 2+1 flavors of light quarks with physical masses. For the HVP both quark-connected and disconnected diagrams are included while the latter is in progress for the HLbL part. I will address systematic errors and the precision of the lattice results that can be achieved before the E989 experiment at FNAL which seeks to reduce the experimental uncertainty by four.