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Quantum filtering one bit at a time[1] JASON RALPH[2], NEIL OXTOBY, University of Liverpool, UK — We consider the purification of a quantum state using the information obtained from a continuous measurement record, where the classical measurement record is digitized to a single bit per measurement after the measurements have been made. Analysis indicates that efficient and reliable state purification is achievable for one- and two-qubit systems. We also consider quantum feedback control based on the discrete one-bit measurement sequences.

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