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Robust Characterization of Quantum Processes

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Accurate characterization of the errors that occur in quantum systems will help to improve the performance of quantum computers. However, many characterization procedures suffer from systematic errors because they assume state preparation, measurement, and other controlling gates are error free. In this talk I will describe a method that can provide estimates of almost all parameters of a quantum map, yet is robust to many types of errors.

In collaboration with Marcus P. da Silva, Colm A. Ryan, Blake R. Johnson, and Thomas Ohki, Raytheon BBN Technologies.