Compiling Quantum Software in the NISQ era
Ross Duncan, CQC

Abstract:

Quantum computers have promised significant improvements over the best classical algorithms for the best part of 20 years now. However actually existing quantum computers today are limited in several important ways from their textbook counterparts. So-called Noisy Intermediate-Scale Quantum (NISQ) computers suffer from hard limits on their memory and runtime. I will discuss how this impacts algorithm design for NISQ devices, and how the compiler can minimise the effects of device noise on the quantum executable.