Reference state performance according to energy and overlap, Be8 $\times 10^6$ $\times 10^6$ 1.2 1.2 Basis states Random states 1.1 1.1 1.0 1.0 -Circuit depth Circuit depth 0.7 0.7 0.6 0.6 -0.50.5 -

0.00

0.02

0.04

0.06

Ref. state overlap

0.08

0.10

0.12

-14

-16

-12

-10

Ref. state energy