

Designing driver Hamiltonians for continuous-time quantum walks: the algorithm

Antoinette Cardoza, Prakrati-Singh Guleria, Pari Maheshkumar, Rajal Maheskumar, Nikki Maisuriya, Jamil McNeilly, Amani Osman, Asmitha Ranjit, Rida Siraj, Aarabi Sivabal, Roshini Tamang

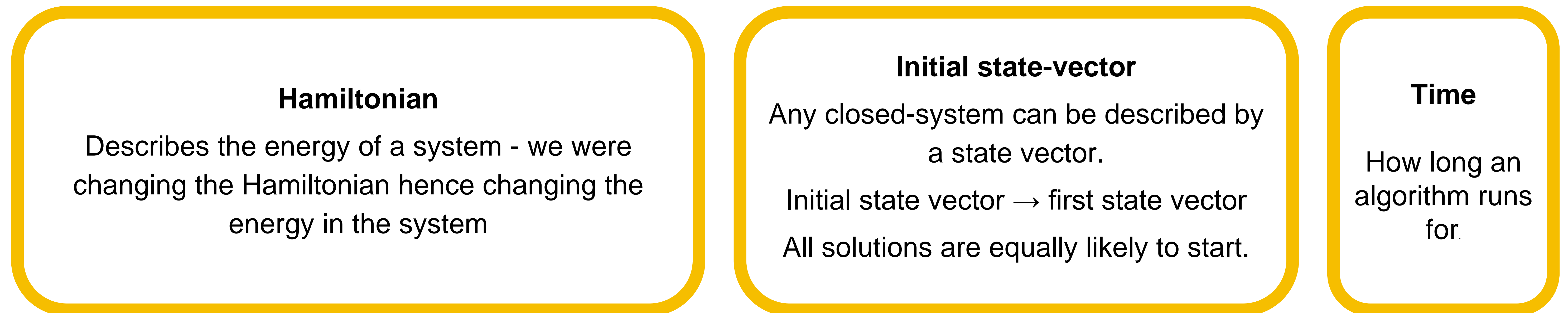
Alperton Community School, Stanley Avenue, Wembley Middlesex, HA0 4JE



Our research investigated possible improvements to a quantum algorithm called a continuous-time quantum walk. We applied the quantum algorithm to a combinatorial optimisation problem called max-cut. In this poster we discuss continuous-time quantum walks.

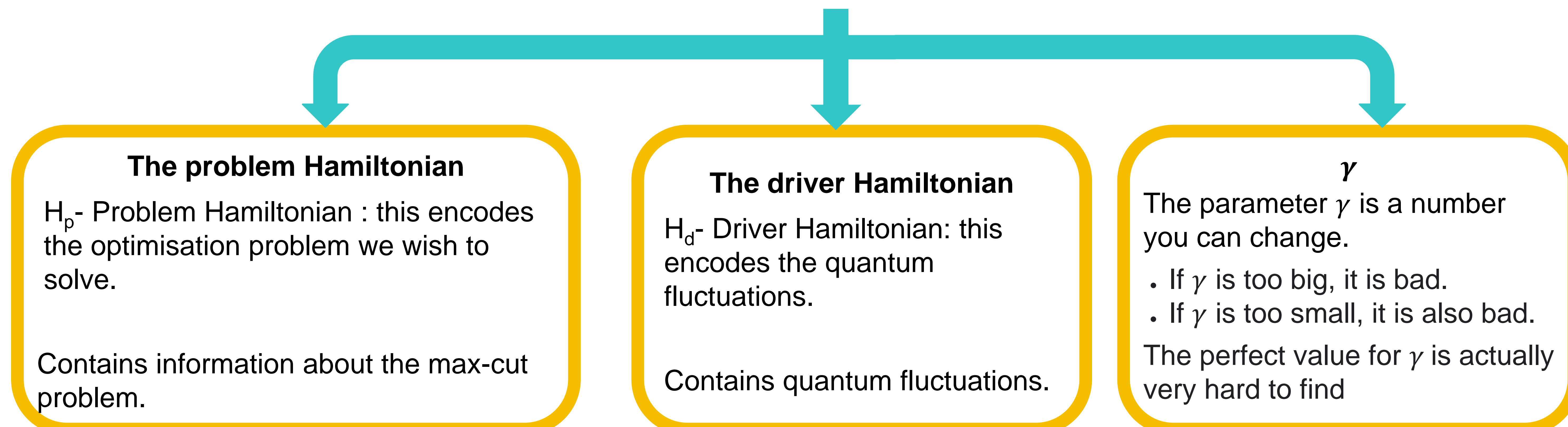
What goes into a continuous time quantum walk?

There are 3 things that go into a continuous-time quantum walk:



→ The Hamiltonian can be broken down into three parts

$$H = H_d + \gamma H_p$$



→ In our research we focused on the driver Hamiltonian

