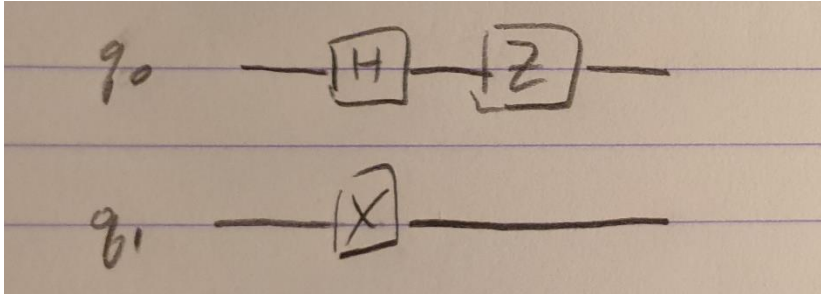# QISKIT BUG REPORT

Circuit

I want to code the following circuit:
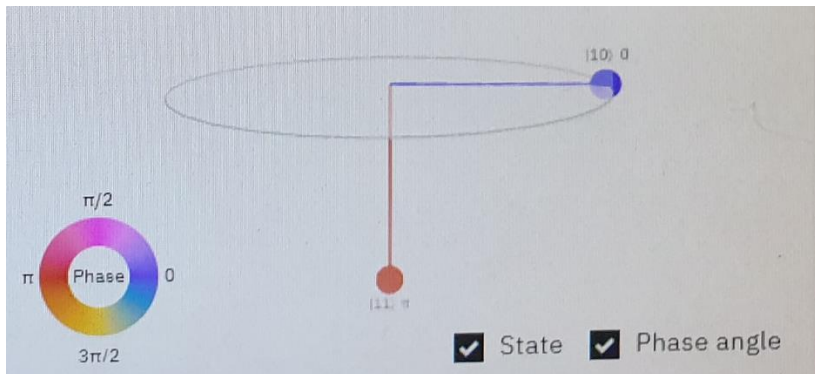

Result on IBM Composer

If I code it on IBM Composer, I get the following state vector:

```
[ 0+0j, 0+0j, 0.707+0j, -0.707+0j ]
```

The plot of the state vector is:

This corresponds to the following result:

The Python code shown on the IBM Composer is:

```
OPENQASM 2.0;
include "qelib1.inc";

qreg q[2];
creg c[2];

h q[0];
x q[1];
z q[0];
```
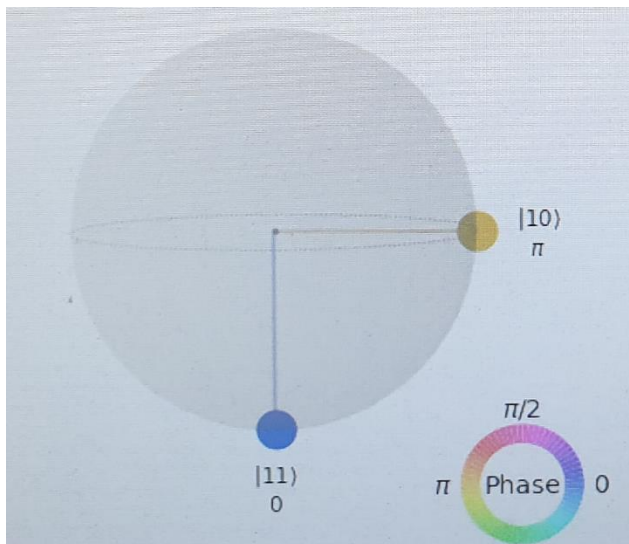
Result on Qiskit

If I code it on Qiskit, I get the same state vector :

```
Statevector([ 0.+0.j,    0.+0.j,    0.70710678+0.j, -0.70710678+0.j],
            dims=(2, 2))
```

The plot of the state vector is different, though.

The plot suggests that the result is:

$$\frac{1}{\sqrt{2}}\left(|11\rangle - |10\rangle \right)$$

which is incorrect.

The Python code used on Qiskit is:

```
def create_circuit():

    qc = QuantumCircuit(2)

    qc.h(0)

    qc.x(1)

    qc.z(0)

    return qc

qc = create_circuit()

sv = Statevector.from_label('00')

sv = sv.evolve(qc)

print(sv)

plot_state_qsphere(sv.data, show_state_labels=True, show_state_phases=True)
```

Conclusion

There seems to be a bug in the plot of the state vector on Qiskit.