## **Table of Contents**

Photon enters from 1	2
psi_qubits = [0, 1], N = 2, realign = False:	
psi_qubits = [0, 1], N = 2, realign = True:	
psi_qubits = [0, 1], N = 3, realign = False:	2
psi_qubits = [0, 1], N = 3, realign = True:	3
psi_qubits = [1, 0], N = 2, realign = False:	3
psi_qubits = [1, 0], N = 2, realign = True:	3
psi_qubits = [1, 0], N = 3, realign = False:	
psi_qubits = [1, 0], N = 3, realign = True:	
psi_qubits = [1, 1], N = 2, realign = False:	
psi_qubits = [1, 1], N = 2, realign = True:	
psi_qubits = [1, 1], N = 3, realign = False:	5
psi_qubits = [1, 1], N = 3, realign = True:	
Photon enters equally	
psi_qubits = [0, 1], N = 2, realign = False:	
psi_qubits = [0, 1], N = 2, realign = True:	7
psi_qubits = [0, 1], N = 3, realign = False:	7
psi_qubits = [0, 1], N = 3, realign = True:	8
psi_qubits = [1, 0], N = 2, realign = False:	8
psi_qubits = [1, 0], N = 2, realign = True:	8
psi_qubits = [1, 0], N = 3, realign = False:	9
psi_qubits = [1, 0], N = 3, realign = True:	9
psi_qubits = [1, 1], N = 2, realign = False:	10
psi_qubits = [1, 1], N = 2, realign = True:	10
psi_qubits = [1, 1], N = 3, realign = False:	10
psi_qubits = [1, 1], N = 3, realign = True:	11

#### Photon enters from 1

## $psi_qubits = [0, 1], N = 2, realign = False:$

1 0 2 Т probability 1.0 o o 1.0 00 0 0 0 0 01 0 0 0 0 10 0 0 0 0 1.0 0 0 1.0 11

### psi\_qubits = [0, 1], N = 2, realign = True:

0 1 2 Т probability 1.0 0 0 1.0 00 1.0 0 0 1.0 01 0 0 0 0 10 0 0 0 0 11 0 0 0 0

## $psi_qubits = [0, 1], N = 3, realign = False:$

1 2 3 Т n probability 1.0 0 0 0 1.0 000 0 0 0 0 0 001 0 0 0 0 0 010 0 0 0 0 0 011 0 0 0 0 0 100 0 0 0 0 0 101 0 0 0 0 0 

### $psi_qubits = [0, 1], N = 3, realign = True:$

## $psi_qubits = [1, 0], N = 2, realign = False:$

Τ probability 0 0.5 0.5 1.0 0.5 0.5 1.0 

### $psi_qubits = [1, 0], N = 2, realign = True:$

n 0 1 2 T probability 0 0.5 0.5 1.0 00 0 0.5 0.5 1.0 01

10	0	0	0	0
11	0	0	0	0

## $psi_qubits = [1, 0], N = 3, realign = False:$

n	0	1	2	3	T	
probability	0	0.333	0.333	0.333	1.0	
000	0	0.333	0.333	0.333	1.0	
001	0	0	0	0	0	
010	0	0	0	0	0	
011	0	0	0	0	0	
100	0	0	0	0	0	
101	0	0	0	0	0	
110	0	0	0	0	0	
111	0	0	0	0	0	

# psi\_qubits = [1, 0], N = 3, realign = True:

n	0	1	2	3	Т	
probability	0	0.333	0.333	0.333	1.0	
000	0	0.333	0.333	0.333	1.0	
001	0	0	0	0	0	
010	0	0	0	0	0	
011	0	0	0	0	0	
100	0	0	0	0	0	
101	0	0	0	0	0	
110	0	0	0	0	0	
111	0	0	0	0	0	

#### $psi_qubits = [1, 1], N = 2, realign = False:$

0 2 n 1 Τ probability 0.5 0.25 0.25 1.00 0.125 0.125 0.25 00 01 0.125 0.125 0.25 0.25 0.25 10 0 0.25 0.25 11 0 0

### **psi\_qubits = [1, 1], N = 2, realign = True:**

2 0 Τ 1 n probability 0.25 0.25 1.0 0.5 00 0.25 0.125 0.125 0.5 01 0 0 0 0 10 0.25 0.125 0.125 0.5 11 0 0 0 0

## psi\_qubits = [1, 1], N = 3, realign = False:

3 0 1 2 Т n probability 0.5 0.167 0.167 0.167 1.000 0.042 0.042 0.042 0.125 000 001 0.042 0.042 0.042 0.125 0 0.042 0.042 0.042 0.125 010 0 011 0.042 0.042 0.042 0.125 0 0.125 100 0.125 0 0 101 0.125 0 0.125 0 110 0.125 0.125 0 0 111 0.125 0.125 0 0 0

# psi\_qubits = [1, 1], N = 3, realign = True:

n	0	1	2	3	Т
probability	0.5	0.167	0.167	0.167	1.0
000	0.25	0.083	0.083	0.083	0.5
001	0	0	0	0	0
010	0	0	0	0	0
011	0	0	0	0	0
100	0.25	0.083	0.083	0.083	0.5
101	0	0	0	0	0
110	0	0	0	0	0
111	0	0	0	0	0

## Photon enters equally

## $psi_qubits = [0, 1], N = 2, realign = False:$

0 1 2 Т probability 1.0 o o 1.0 00 0 0 0 0 01 0 0 0 0 10 0 0 0 0 1.0 0 0 1.0 11

### psi\_qubits = [0, 1], N = 2, realign = True:

0 1 2 Т probability 1.0 0 0 1.0 00 1.0 0 0 1.0 01 0 0 0 0 10 0 0 0 0 11 0 0 0 0

## $psi_qubits = [0, 1], N = 3, realign = False:$

1 2 3 Т n probability 1.0 0 0 0 1.0 000 0 0 0 0 0 001 0 0 0 0 0 010 0 0 0 0 0 011 0 0 0 0 0 100 0 0 0 0 0 101 0 0 0 0 0 

## $psi_qubits = [0, 1], N = 3, realign = True:$

## $psi_qubits = [1, 0], N = 2, realign = False:$

1 0 2 Т probability 0 1.0 0 1.0 00 0 1.0 0 1.0 01 0 0 0 0 10 0 0 0 0 11 0 0 0 0

### psi\_qubits = [1, 0], N = 2, realign = True:

n 0 1 2 T probability 0 1.0 0 1.0 0 0 1.0

## $psi_qubits = [1, 0], N = 3, realign = False:$

n	0	1	2	3	T
probability	0	1.0	0	0	1.0
000	0	1.0	0	0	1.0
001	0	0	0	0	0
010	0	0	0	0	0
011	0	0	0	0	0
100	0	0	0	0	0
101	0	0	0	0	0
110	0	0	0	0	0
111	0	0	0	0	0

## $psi_qubits = [1, 0], N = 3, realign = True:$

	_	_			
n	0	1	2	3	Т
probability	0	1.0	0	0	1.0
000	0	1.0	0	0	1.0
001	0	0	0	0	0
010	0	0	0	0	0
011	0	0	0	0	0
100	0	0	0	0	0
101	0	0	0	0	0
110	0	0	0	0	0
111	0	0	0	0	0

#### psi\_qubits = [1, 1], N = 2, realign = False:

n 0 1 2 Τ probability 0.3 0.1 1.0 0.6 0.2 00 0.2 0 0.05 01 0.1 0.05 0.2 0.1 10 0.05 0.05 0.2 0.4 11 0 0 0.4

### **psi\_qubits = [1, 1], N = 2, realign = True:**

2 0 1 Τ n probability 0.3 0.1 1.0 0.6 0.2 00 0.4 0.6 01 0.1 0.05 0.05 0.2 10 0.1 0.05 0.05 0.2 11 0 0 0 0

## psi\_qubits = [1, 1], N = 3, realign = False:

1 2 3 Т 0 probability 0.667 0.222 0.056 0.056 1.000 000 0.083 0.083 0 0 0.037 0.009 0.009 0.083 001 0.028 010 0.028 0.037 0.009 0.009 0.083 011 0.111 0.009 0.009 0.009 0.139 100 0.028 0.037 0.009 0.009 0.083 0.009 0.009 101 0.111 0.009 0.139 0.009 110 0.111 0.009 0.009 0.139 111 0.25 0.250 0 0 0

# psi\_qubits = [1, 1], N = 3, realign = True:

n	0	1	2	3	Т
probability	0.667	0.222	0.056	0.056	1.0
000	0.5	0.167	0	0	0.667
001	0.056	0.019	0.019	0.019	0.111
010	0.056	0.019	0.019	0.019	0.111
011	0	0	0	0	0
100	0.056	0.019	0.019	0.019	0.111
101	0	0	0	0	0
110	0	0	0	0	0
111	0	0	0	0	0