

Discrete Logarithm Circuits

Elliot Snow-Kropla
Kyriakidis Group

September 20, 2013

The most straightforward way to make an AQC circuit for a one-way function is to take advantage of the fact that our computations are reversible; thus we just make a circuit for computing the function going the easy way.

1 Introduction

2 Background

2.1 Classical Computing

2.2 Quantum Computing

2.3 Adiabatic Quantum Computing

```
def modular_power(b, e, m):  
    r = 1  
    while e > 0:  
        if (e % 2) == 1:  
            r = (r * b) % m  
        e = e >> 1  
        b = (b * b) % m  
    return r
```

References