

Exponential function: Quick and Dirty

Martin Cradock Østerlund

April 27, 2022

Abstract

The exponential function is a very important function used in multiple fields in physics. This short paper introduces a numerical computation of the exponential function, which uses only multiplication and division. I will be comparing it to the exponential algorithm implemented in C#.

1 Introduction

The C# representation of the exponential function is the following:

```
static double ex(double x){  
    if(x<0)return 1/ex(-x);  
    if(x>1.0/8) return Pow(ex(x/2),2);  
    return 1+x*(1+x/2*(1+x/3*(1+x/4*(1+x/5*(1+x/6*(1+x/7*(1+x/8*(1+x/9*(1+x/10)))))))));  
}
```