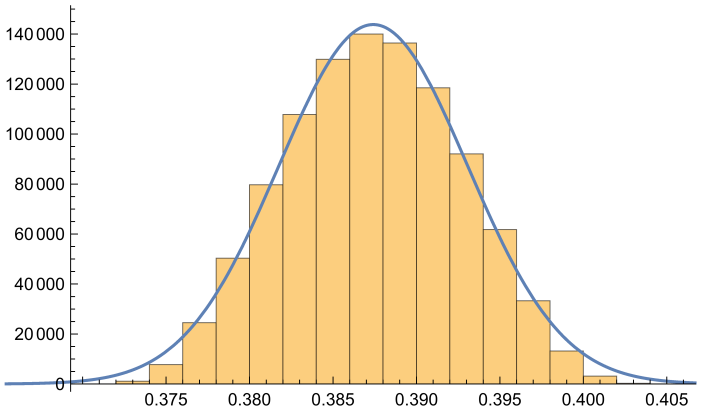
In[1]:=
```
ClearAll["Global`*"]
$Line = 0;
```

In[1]:=
```
attencoeffs =
  {0.2778, 0.3207, 1.205, 1.593, 1.060, 0.2570, 0.9639, 1.760, 0.7661, 1.512};
n = Length[attencoeffs];
percentages = {{0.871, 0.914}, {0, 0.004}, {0, 0.005}, {0.012, 0.02}, {0, 0.003},
   {0.021, 0.029}, {0.0018, 0.0029}, {0.051, 0.061}, {0, 0.002}, {0, 0.0005}};
```

In[4]:=
```
trials = 1 000 000;
randomperc = Table[RandomReal[percentages[[i]], trials], {i, n}];
mu = Sum[randomperc[[i]] * attencoeffs[[i]], {i, n}] / Sum[randomperc[[i]], {i, n}];
```

In[7]:=
```
b = 20; bins = HistogramList[mu, b];
model = NonlinearModelFit[
   Table[{(bins[[1, i]] + bins[[1, i + 1]]) / 2, bins[[2, i]]}, {i, Length[bins[[2]]]}],
   a Exp[ -1/2 ((x - μ)/σ)^2 ], {{a, 140 000}, {μ, 0.385}, {σ, 0.1}}, x];
Show[Histogram[mu, b], Plot[model["BestFit"], {x, 0.3, 0.5}, PlotRange → All]]
model["ParameterTable"]
Print["Percent Error = ",
 100 * model["BestFitParameters"][[3, 2]] / model["BestFitParameters"][[2, 2]]]
```

Out[9]=



Out[10]=

	Estimate	Standard Error	t-Statistic	P-Value
a	143 799.4847	1887.012575	76.20483646	$7.757103451 \times 10^{-21}$
μ	0.3874113737	0.0000857455216	4518.152861	$2.008768604 \times 10^{-47}$
σ	0.005659576743	0.00008580566074	65.95808125	$6.726264027 \times 10^{-20}$

```
Percent Error = 1.460870053
```

In[12]:=
```
Print["Mean = ", Mean[mu]]
Print["Standard Deviation = ", StandardDeviation[mu]]
Print["Percent Error = ", 100 * StandardDeviation[mu] / Mean[mu]]
```

```
Mean = 0.3874076403

Standard Deviation = 0.005220986544

Percent Error = 1.347672581
```