

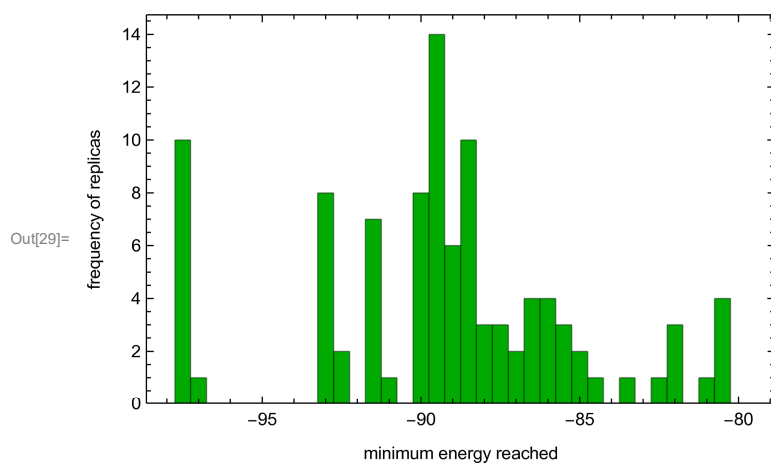
# Brendan Philbin

## Thermal Annealing Analysis

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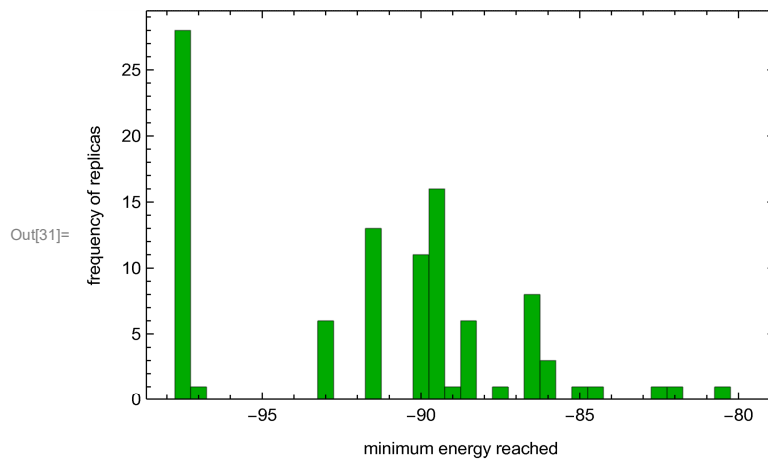
Trial 1 (no annealing):  $N=64$ ,  $M=100$ ,  $R=100$ ,  $J=2$ ,  $S=3$ ,  $C=4$ ,  
 $\beta=5$

```
In[27]:= SetDirectory[NotebookDirectory[]];  
trial1 = Flatten[Import["histogram1.csv", "CSV"]];  
Histogram[trial1, 100, ChartStyle -> Darker[Green], Frame -> True,  
FrameLabel -> {"minimum energy reached", "frequency of replicas"}]
```



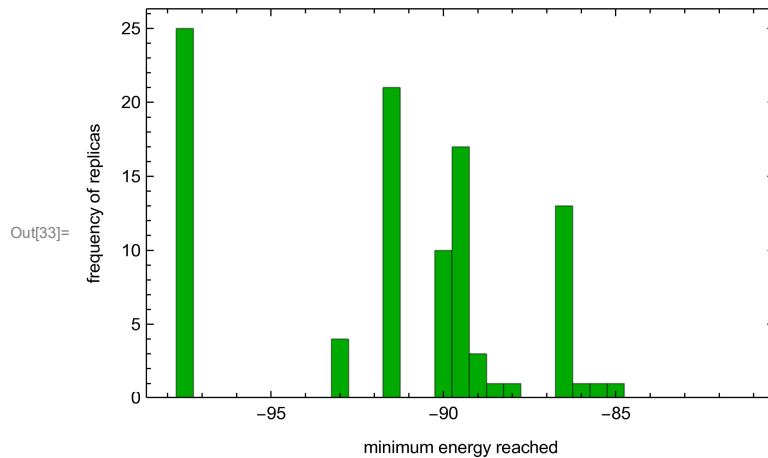
## Trial 2 (no annealing): N=64, M=200, R=100, J=2, S=4, C=5, $\beta=5$

```
In[30]:= trial2 = Flatten[Import["histogram2.csv", "CSV"]];
Histogram[trial2, 100, ChartStyle -> Darker[Green], Frame -> True,
FrameLabel -> {"minimum energy reached", "frequency of replicas"}]
```



## Trial 3 (no annealing): N=64, M=400, R=100, J=2, S=5, C=6, $\beta=5$

```
In[32]:= trial3 = Flatten[Import["histogram3.csv", "CSV"]];
Histogram[trial3, 100, ChartStyle -> Darker[Green], Frame -> True,
FrameLabel -> {"minimum energy reached", "frequency of replicas"}]
```



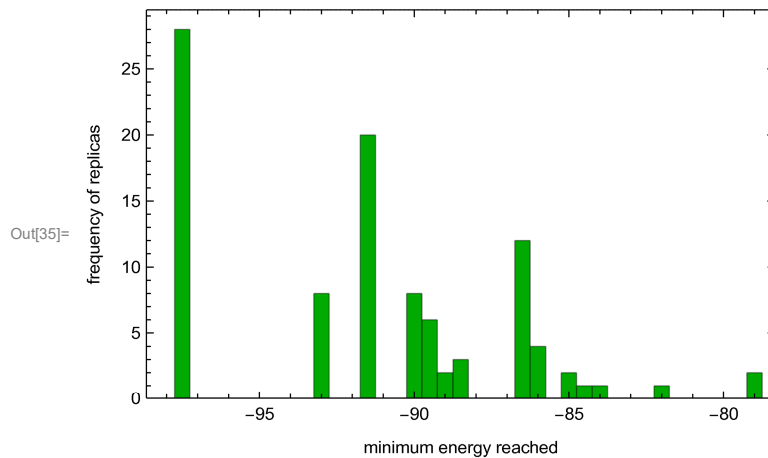
## Trial 4 (w/ annealing): N=64, M=100, R=100, J=2, S=3, C=4,

$\beta=5$ 

```

In[34]:= trial4 = Flatten[Import["histogram4.csv", "CSV"]];
Histogram[trial4, 100, ChartStyle → Darker[Green], Frame → True,
  FrameLabel → {"minimum energy reached", "frequency of replicas"}]

```

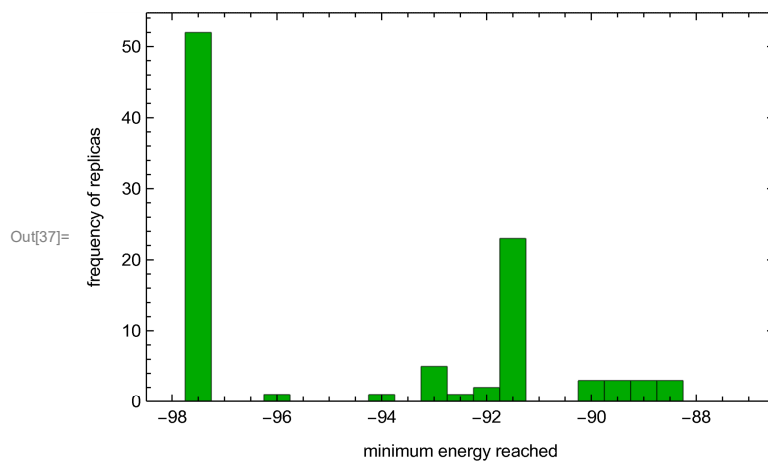


Trial 5 (w/ annealing): N=64, M=200, R=100, J=2, S=4, C=5,  
 $\beta=5$

```

In[36]:= trial5 = Flatten[Import["histogram5.csv", "CSV"]];
Histogram[trial5, 100, ChartStyle → Darker[Green], Frame → True,
  FrameLabel → {"minimum energy reached", "frequency of replicas"}]

```



## Trial 6 (w/ annealing): $N=64$ , $M=400$ , $R=100$ , $J=2$ , $S=5$ , $C=6$ , $\beta=5$

```
In[38]:= trial6 = Flatten[Import["histogram6.csv", "CSV"]];  
Histogram[trial6, 100, ChartStyle -> Darker[Green], Frame -> True,  
FrameLabel -> {"minimum energy reached", "frequency of replicas"}]
```

