

2015-01-23-140201-sage-lstlisting

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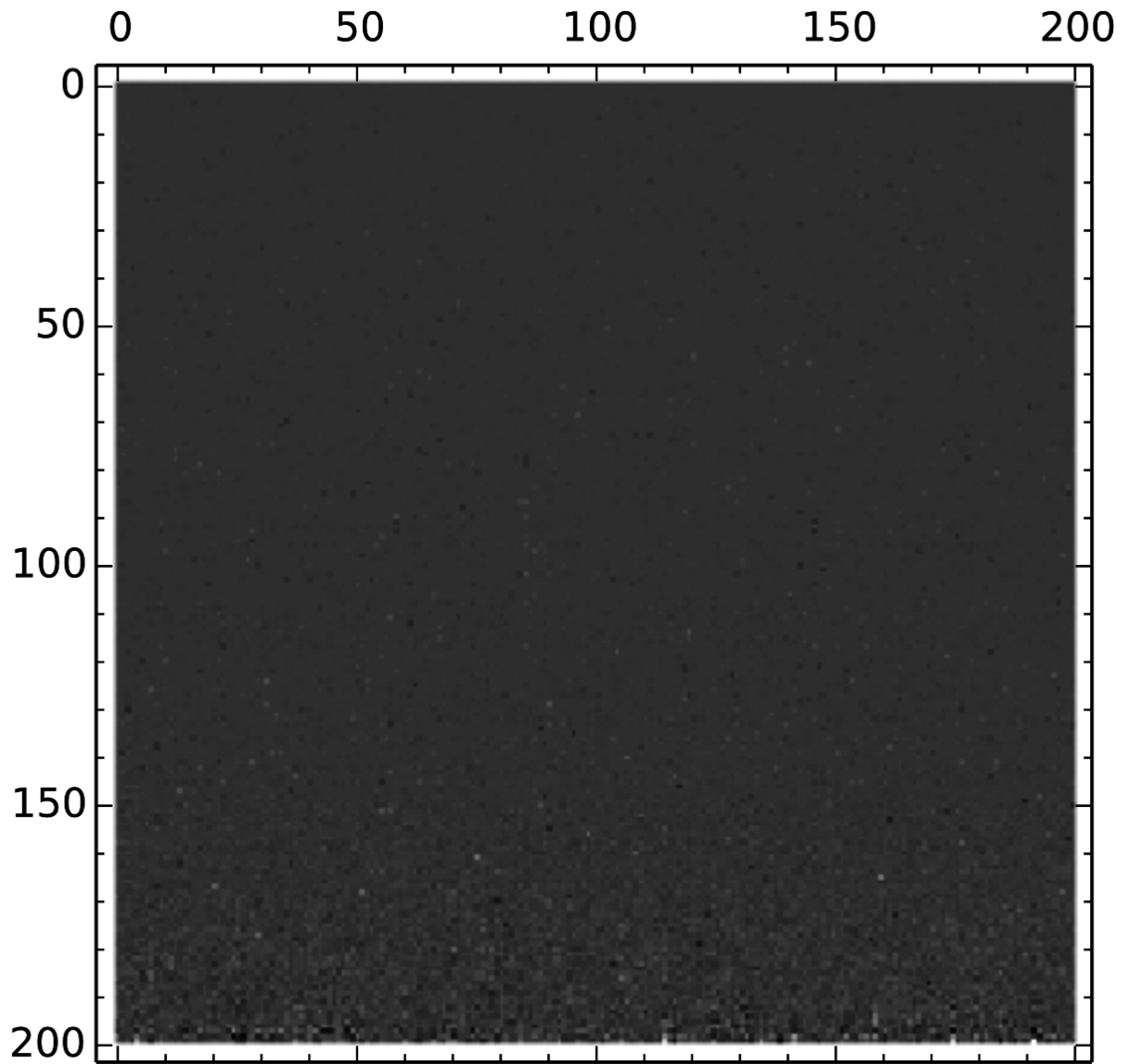
1/24/2015

Contents

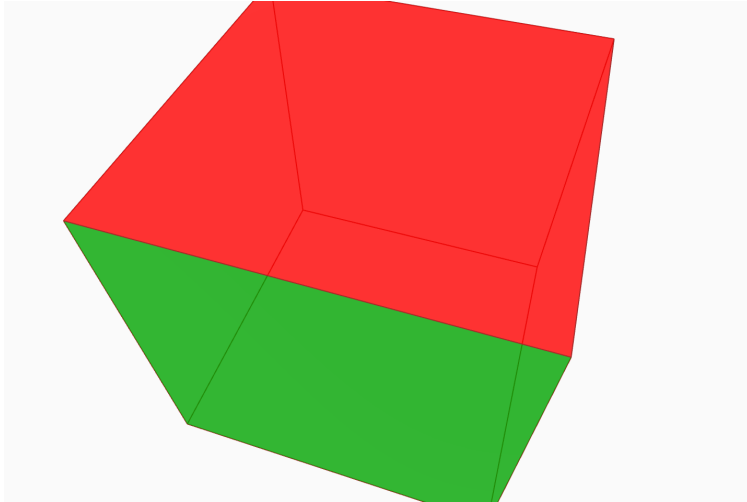
```
A = random_matrix(ZZ, 200)
t = cputime()
B = A.LLL()
cputime(t)
6.409722
```

```
%time B = A.LLL(algorithm="fpLLL:fast")
CPU time: 6.36 s, Wall time: 6.37 s
```

```
matrix_plot(B)
```



```
show(cube(color=['red', 'blue', 'green'], frame_thickness=2,  
         frame_color='brown', opacity=0.8), frame=False)
```



2+2

Foo

```
A = matrix ( ZZ , 3, [1 ,4 ,9 , 16 ,25 ,36 , 49 ,64 ,81])
S , U , V = A.smith_form (); S
[ 1  0  0]
[ 0  3  0]
[ 0  0 72]
```