

```
SetDirectory["C:\\drorbn\\AcademicPensieve\\People\\Dunfield"]
```

```
C:\\drorbn\\AcademicPensieve\\People\\Dunfield
```

```
<< KnotTheory`
```

```
Loading KnotTheory` version of September 6, 2014, 13:37:37.2841.
```

```
Read more at http://katlas.org/wiki/KnotTheory.
```

```
Ks = ReadList["nmd_random_knots"]
```

```
{PD[X[3, 1, 4, 0], X[5, 3, 0, 2], X[1, 5, 2, 4]],
 ... 996 ..., PD[X[555, 537, 556, 536], X[1662, 1693, 1663, 1694],
 X[422, 426, 423, 425], X[1962, 1888, 1963, 1887], X[760, 338, 761, 337],
 ... 990 ..., X[1257, 1255, 1258, 1254], X[814, 1294, 815, 1293],
 X[1699, 1484, 1700, 1485], X[1156, 1133, 1157, 1134], X[1444, 486, 1445, 485]]}
```

large output

show less

show more

show all

set size limit...

```
Length@Ks
```

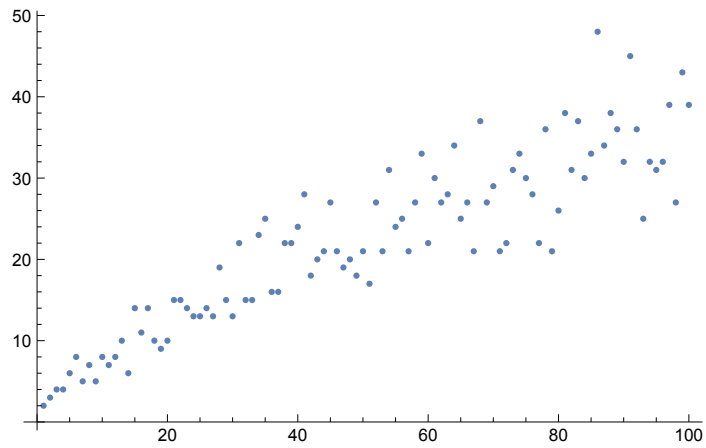
```
998
```

```
NaiveWidth[L_] := NaiveWidth[L] = Module[
  {pd = PD[L], width = 0, bndry = {}, pos, fresh},
  While[Length[pd] > 0,
    pos = Last[Ordering[(Length[(List @@ #) ∩ bndry] & /@ pd]]];
    fresh = List@@(pd[[pos]]);
    bndry = Complement[bndry ∪ fresh, bndry ∩ fresh];
    width = Max[width, Length@bndry];
    pd = Drop[pd, {pos}]
  ];
  width/2
];
```

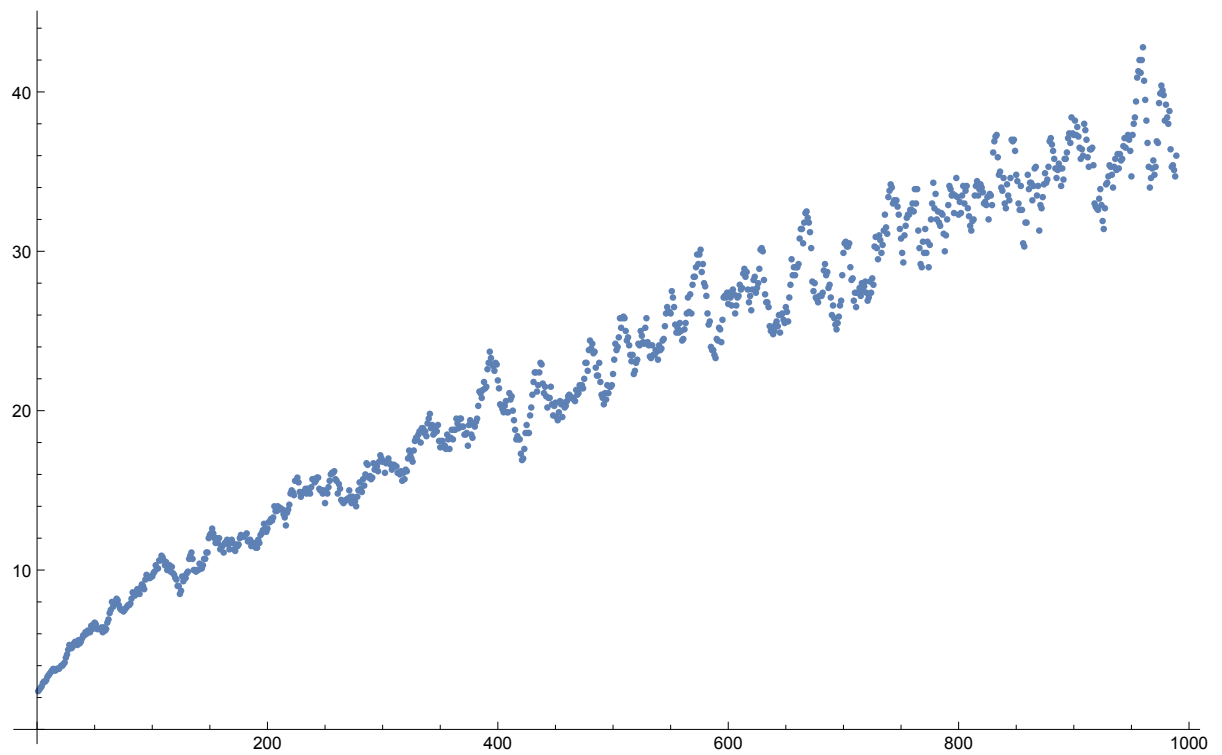
```
NaiveWidth[Last[Ks]]
```

```
39
```

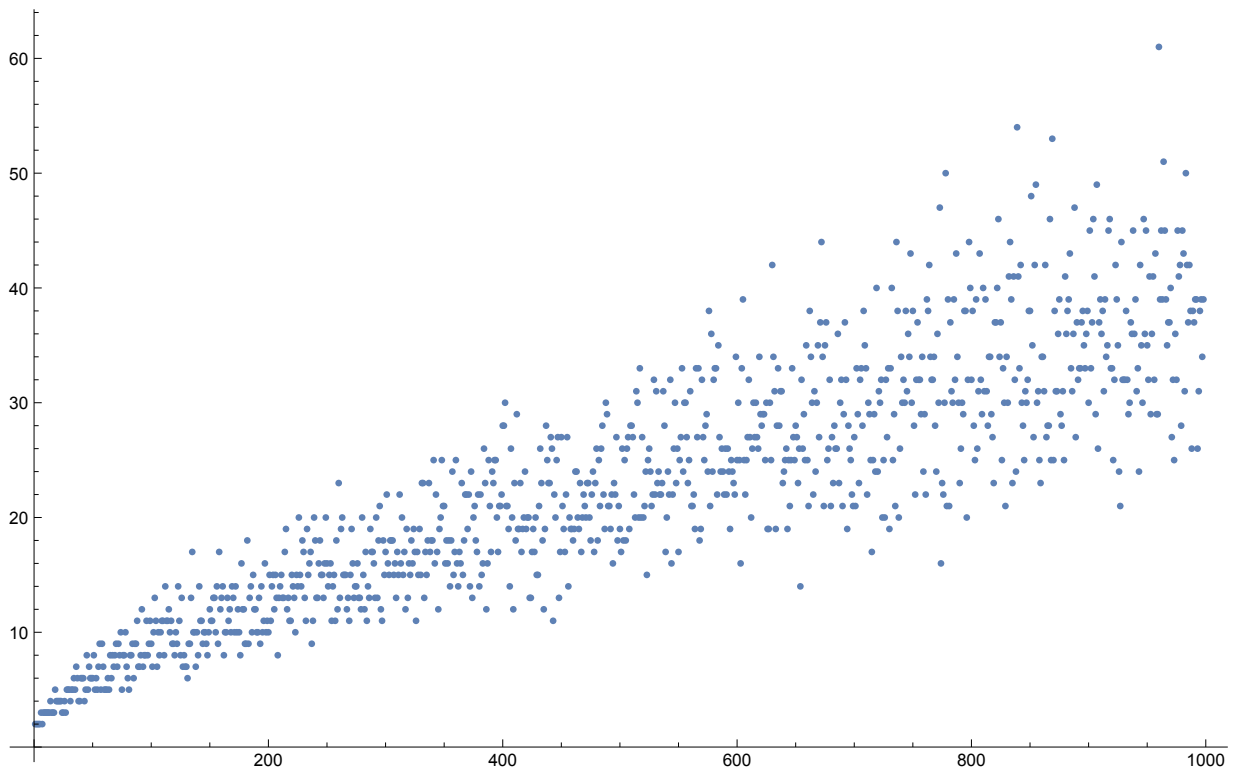
```
ListPlot[Table[NaiveWidth[Ks[[i]]], {i, 1, Length@Ks, 10}]]
```



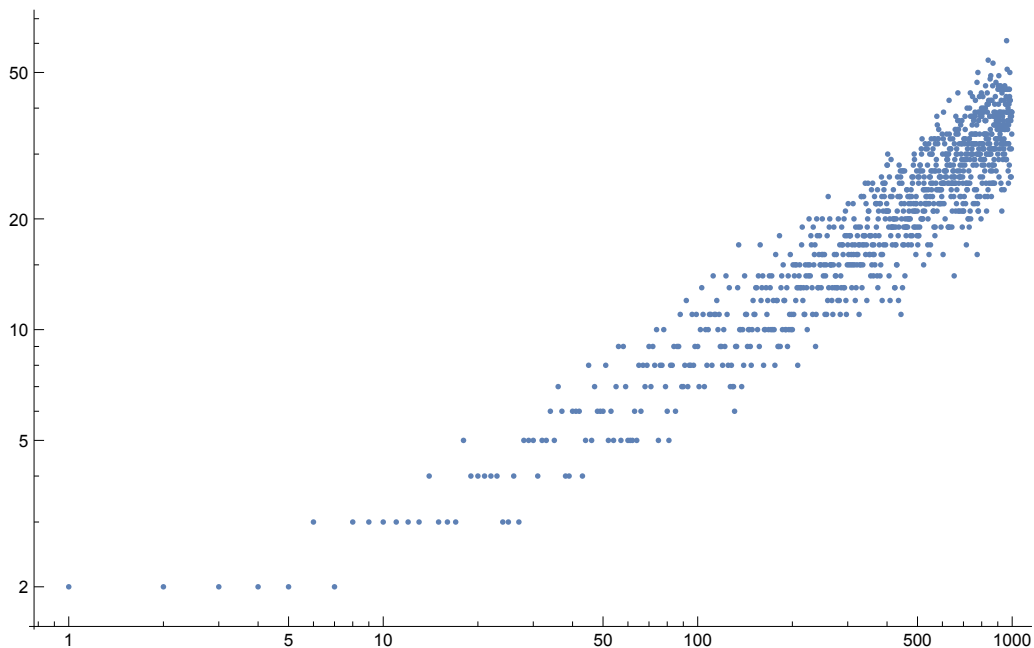
```
ListPlot[MovingAverage[NaiveWidth /@ Ks, 10]]
```



ListPlot[NaiveWidth /@ Ks]



ListLogLogPlot[NaiveWidth /@ Ks]



Fit[Thread[Log@{Range[3, 1000], NaiveWidth /@ Ks}], {1, x}, x]

-0.593605 + 0.600237 x

ListLogLogPlot[{NaiveWidth /@ Ks, Exp[-0.593605 + 0.600237 Log[Range[3, 1000]]]}]

