

```
Switch[Offline,
Online, ideall = Import["http://katlas.org/w/images/d/d2/Ideal.txt.gz", "String"],
Offline, ideall = Import["C:\\drorbn\\People\\Gilbert\\ideal.txt", "String"]
]
```

A very large output was generated. Here is a sample of it:

```
<COMMENT Title="Database of Ideal knots" />
<COMMENT Author="Brian Gilbert" />
<COMMENT Date="10/11/2008 12:30:12 p.m." />
<AB Id="3:1:1" Conway="3" L="16.372861" D=" 1.000000">
  <Coeff I= 1 A=" 0.374743 ... 51,-0.000089,-0.000023" />
  <Coeff I= 99 A="-0.000012,-0.000101, 0.000023" B=" 0.000008, 0.000021,-0.000095" />
  <Coeff I=100 A="-0.000019, 0.000053, 0.000013" B="-0.000009,-0.000046,-0.000075" />
</AB>
```

Show Less

Show More

Show Full Output

Set Size Limit...

```
(* ideall=Import["C:\\drorbn\\People\\Gilbert\\ideal.txt", "String"] *)
ideal = "<data>" <> StringReplace[ideall,
  "I=" ~~ " " ... ~~ i : (DigitCharacter ..) => "I=\"\" <> i <> \"\""] <> "</data>";
(* xml=ImportString[ideal, "XML"]; *)
data = Cases[ImportString[ideal, "XML"], XMLElement["AB", ab___] => AB[ab], Infinity];
```

```
Length[data]
```

```
250
```

```
ProcessAB[ab_AB] := Module[
  {Id, CS, L, n, c, k, K, coeffs},
  {Id, CS, L} = {"Id", "Conway", "L"} /. ab[[1]];
  {n, c, k} = ToExpression /@ StringSplit[Id, ":"];
  If[n == 10 && 161 < k ≤ 166, --k];
  K = Knot[n, k];
  coeffs = ab[[2]] /. XMLElement["Coeff", l_List, {}] => {
    ToExpression["I" /. l],
    ToExpression["{" <> ("A" /. l) <> "}"],
    ToExpression["{" <> ("B" /. l) <> "}"]
  };
  If[c == 1,
    RopeLength[K] = ToExpression[L];
    ConwayString[K] = CS;
    IdealPresentationData[K] = coeffs;
    K,
    Print["Trouble in ", K]
  ]
];

IdealPresentation[K_Knot][t_] := Plus @@ (IdealPresentationData[K] /.
  {i_, A_List, B_List} => A Cos[i t] + B Sin[i t]
)

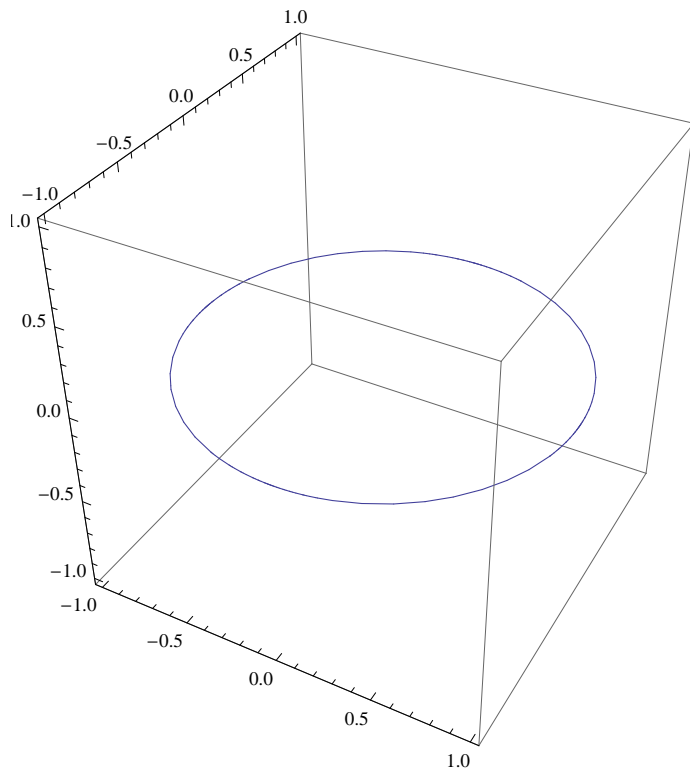
Ks = Union[ProcessAB /@ data];

Max[RopeLength /@ Ks]

46.2629

RopeLength[Knot[0, 1]] = N[Pi];
IdealPresentationData[Knot[0, 1]] = {{1, {1, 0, 0}, {0, 1, 0}}};
```

```
ParametricPlot3D[IdealPresentation[Knot[0, 1]][t], {t, 0, 2 Pi}]
```



```
ParametricPlot3D[IdealPresentation[Knot[3, 1]][t], {t, 0, 2 Pi}]
```

