Link from Dylan

Date: Wed, 2 Sep 2009 17:58:51 -0400
From: Dylan Thurston
To: Dror Bar-Natan <drorbn@math.toronto.edu>
Subject: Visiting Toronto

Hello Dror,

[...]

I also wanted to mention this amazing Seifert surface in downtown
Philadelphia that I recently saw:
http://www.flickr.com/photos/29923994@N03/3105524757/in/photostream/
It's called "Triune" by Robert Engman. I would add it to the Knot
Atlas, but I haven't yet located the link in the tables. (It's the
trefoil with a core of one solid torus added.)

Best,
    Dylan
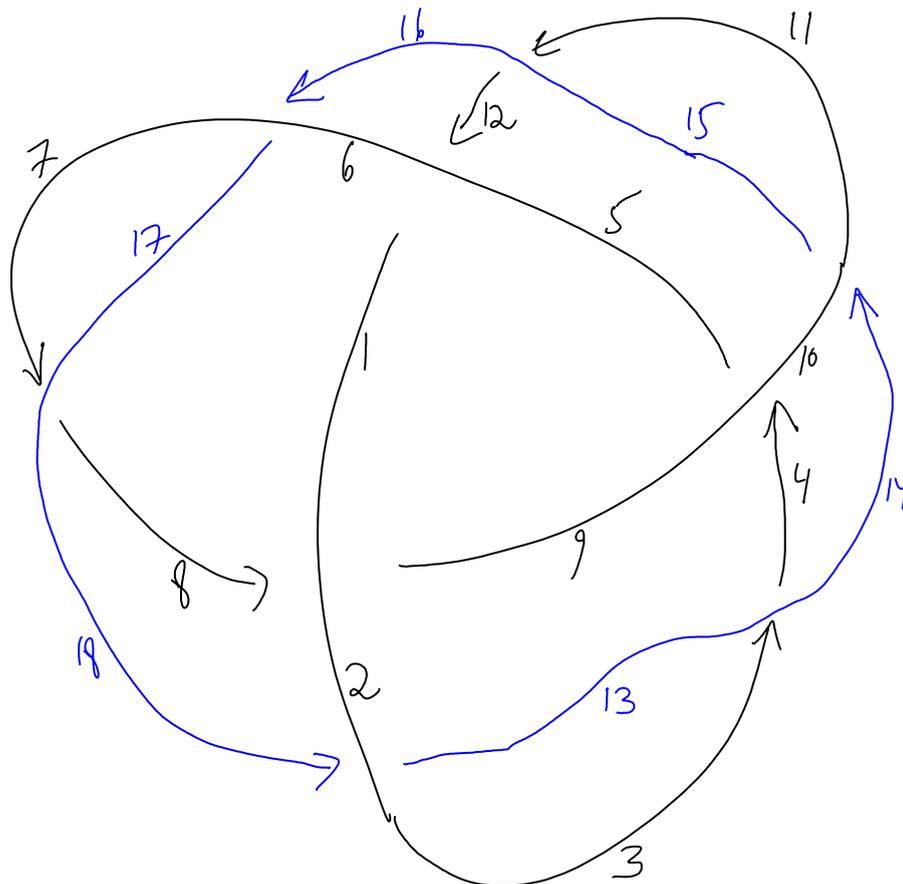
$$X_{12,6,1,5} \quad X_{8,2,9,1} \quad X_{4,10,5,9}$$

$$X_{18,3,13,2} \quad X_{3,14,4,13} , \quad X_{14,11,15,10}$$

$$X_{\ldots} \quad X_{\ldots} , \quad X_{\ldots}$$

$X_{11,16,12,15} \quad X_{16,7,17,6,} \quad X_{7,18,8,17}$

```
In[1]:= << KnotTheory`

    Loading KnotTheory` version of April 20, 2009, 14:18:34.482.
    Read more at http://katlas.org/wiki/KnotTheory.

In[2]:= L = PD[
        X[12, 6, 1, 5], X[8, 2, 9, 1], X[4, 10, 5, 9],
        X[18, 3, 13, 2], X[3, 14, 4, 13], X[14, 11, 15, 10],
        X[11, 16, 12, 15], X[16, 7, 17, 6], X[7, 18, 8, 17]
        ];

In[3]:= j = Jones[L][q]
```

$Out[3]= -q^{7/2} - q^{11/2}$

```
In[4]:= maybe = Select[AllLinks[], (
        quo = Factor[(Jones[#][q] / j)];
        quo == 1 || quo == q || MatchQ[quo, q^_]
        ) &]

    KnotTheory::loading : Loading precomputed data in Jones4Links`.
```

$Out[4]= \{Link[2, Alternating, 1], Link[9, NonAlternating, 15]\}$

```
In[5]:= mva = MultivariableAlexander[L][t]

    KnotTheory::credits :
     The multivariable Alexander program "MVA2" was written by Jana Archibald at the University of Toronto in 2007-2008.
```

$$Out[5]= \frac{1 + t[1]\, t[2]^2 + t[1]^2\, t[2]^4}{t[1]\, t[2]^2}$$

```
In[6]:= MultivariableAlexander[#][t] & /@ maybe

    KnotTheory::loading : Loading precomputed data in MultivariableAlexander4Links`.
```

$$Out[6]= \left\{ -t[1],\ -\frac{1 + t[1]\, t[2]^2 + t[1]^2\, t[2]^4}{t[1]\, t[2]^2} \right\}$$

```
In[7]:= DrawMorseLink[Link["L9n15"]]

    KnotTheory::loading : Loading precomputed data in PD4Links`.

    KnotTheory::credits : MorseLink was added to KnotTheory` by Siddarth Sankaran
    at the University of Toronto in the summer of 2005.

    KnotTheory::credits : DrawMorseLink was written by Siddarth Sankaran
    at the University of Toronto in the summer of 2005.
```

Out[7]=
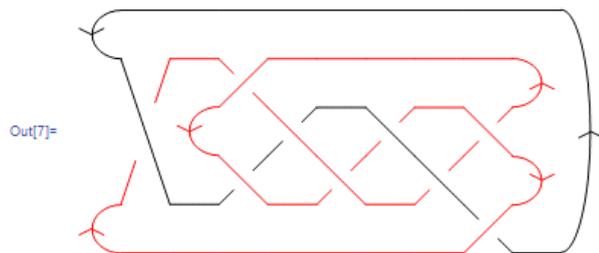
See also MathematicaNotebooks/LinkFromDylan at
http://katlas.math.toronto.edu/drorbn/AcademicPensieve/2009-09/index.html
and http://katlas.org/wiki/L9n15