```
In[•]:= PD[GST48] = PD[X[1, 15, 2, 14], X[29, 2, 30, 3], X[40, 4, 41, 3],
          X[4, 44, 5, 43], X[5, 26, 6, 27], X[95, 7, 96, 6], X[7, 1, 8, 96], X[8, 14, 9, 13],
          X[28, 9, 29, 10], X[41, 11, 42, 10], X[11, 43, 12, 42], X[12, 27, 13, 28],
          X[15, 31, 16, 30], X[61, 16, 62, 17], X[72, 17, 73, 18], X[83, 18, 84, 19],
          X[34, 20, 35, 19], X[20, 89, 21, 90], X[92, 21, 93, 22], X[22, 79, 23, 80],
          X[23, 68, 24, 69], X[24, 57, 25, 58], X[56, 25, 57, 26], X[31, 63, 32, 62],
          X[32, 74, 33, 73], X[33, 85, 34, 84], X[35, 50, 36, 51], X[81, 37, 82, 36],
          X[70, 38, 71, 37], X[59, 39, 60, 38], X[54, 39, 55, 40], X[55, 45, 56, 44],
          X[45, 59, 46, 58], X[46, 70, 47, 69], X[47, 81, 48, 80], X[91, 49, 92, 48],
          X[49, 91, 50, 90], X[82, 52, 83, 51], X[71, 53, 72, 52], X[60, 54, 61, 53],
          X[74, 63, 75, 64], X[85, 64, 86, 65], X[65, 76, 66, 77], X[66, 87, 67, 88],
          X[94, 67, 95, 68], X[86, 75, 87, 76], X[77, 88, 78, 89], X[93, 78, 94, 79]];

In[•]:= GST48 // PD

Out[•]= PD[X[1, 15, 2, 14], X[29, 2, 30, 3], X[40, 4, 41, 3], X[4, 44, 5, 43], X[5, 26, 6, 27],
          X[95, 7, 96, 6], X[7, 1, 8, 96], X[8, 14, 9, 13], X[28, 9, 29, 10], X[41, 11, 42, 10],
          X[11, 43, 12, 42], X[12, 27, 13, 28], X[15, 31, 16, 30], X[61, 16, 62, 17], X[72, 17, 73, 18],
          X[83, 18, 84, 19], X[34, 20, 35, 19], X[20, 89, 21, 90], X[92, 21, 93, 22], X[22, 79, 23, 80],
          X[23, 68, 24, 69], X[24, 57, 25, 58], X[56, 25, 57, 26], X[31, 63, 32, 62], X[32, 74, 33, 73],
          X[33, 85, 34, 84], X[35, 50, 36, 51], X[81, 37, 82, 36], X[70, 38, 71, 37], X[59, 39, 60, 38],
          X[54, 39, 55, 40], X[55, 45, 56, 44], X[45, 59, 46, 58], X[46, 70, 47, 69],
          X[47, 81, 48, 80], X[91, 49, 92, 48], X[49, 91, 50, 90], X[82, 52, 83, 51], X[71, 53, 72, 52],
          X[60, 54, 61, 53], X[74, 63, 75, 64], X[85, 64, 86, 65], X[65, 76, 66, 77],
          X[66, 87, 67, 88], X[94, 67, 95, 68], X[86, 75, 87, 76], X[77, 88, 78, 89], X[93, 78, 94, 79]]

In[•]:= EPD[K_] := EPD @@ PD[K] /. {x : X[i_, j_, k_, l_] :> If[PositiveQ[x], X_{l,i}, Overscript[X, _]_{j,i}]}
        EPD[GST48]

Out[•]= EPD[X_{14,1}, Overscript[X, _]_{2,29}, X_{3,40}, X_{43,4}, Overscript[X, _]_{26,5}, X_{6,95}, X_{96,7}, X_{13,8}, Overscript[X, _]_{9,28}, X_{10,41}, X_{42,11}, Overscript[X, _]_{27,12},
          X_{30,15}, Overscript[X, _]_{16,61}, Overscript[X, _]_{17,72}, Overscript[X, _]_{18,83}, X_{19,34}, Overscript[X, _]_{89,20}, Overscript[X, _]_{21,92}, Overscript[X, _]_{79,22}, Overscript[X, _]_{68,23}, Overscript[X, _]_{57,24}, Overscript[X, _]_{25,56}, X_{62,31},
          X_{73,32}, X_{84,33}, Overscript[X, _]_{50,35}, X_{36,81}, X_{37,70}, X_{38,59}, Overscript[X, _]_{39,54}, X_{44,55}, X_{58,45}, X_{69,46}, X_{80,47}, X_{48,91},
          X_{90,49}, X_{51,82}, X_{52,71}, X_{53,60}, Overscript[X, _]_{63,74}, Overscript[X, _]_{64,85}, Overscript[X, _]_{76,65}, Overscript[X, _]_{87,66}, Overscript[X, _]_{67,94}, Overscript[X, _]_{75,86}, Overscript[X, _]_{88,77}, Overscript[X, _]_{78,93}]

In[•]:= PD @@ EPD[GST48] /. {X_{i_,j_} :> X[j, i + 1, j + 1, i], Overscript[X, _]_{i_,j_} :> X[j, i, j + 1, i + 1]}

Out[•]= PD[X[1, 15, 2, 14], X[29, 2, 30, 3], X[40, 4, 41, 3], X[4, 44, 5, 43], X[5, 26, 6, 27],
          X[95, 7, 96, 6], X[7, 97, 8, 96], X[8, 14, 9, 13], X[28, 9, 29, 10], X[41, 11, 42, 10],
          X[11, 43, 12, 42], X[12, 27, 13, 28], X[15, 31, 16, 30], X[61, 16, 62, 17], X[72, 17, 73, 18],
          X[83, 18, 84, 19], X[34, 20, 35, 19], X[20, 89, 21, 90], X[92, 21, 93, 22], X[22, 79, 23, 80],
          X[23, 68, 24, 69], X[24, 57, 25, 58], X[56, 25, 57, 26], X[31, 63, 32, 62], X[32, 74, 33, 73],
          X[33, 85, 34, 84], X[35, 50, 36, 51], X[81, 37, 82, 36], X[70, 38, 71, 37], X[59, 39, 60, 38],
          X[54, 39, 55, 40], X[55, 45, 56, 44], X[45, 59, 46, 58], X[46, 70, 47, 69],
          X[47, 81, 48, 80], X[91, 49, 92, 48], X[49, 91, 50, 90], X[82, 52, 83, 51], X[71, 53, 72, 52],
          X[60, 54, 61, 53], X[74, 63, 75, 64], X[85, 64, 86, 65], X[65, 76, 66, 77],
          X[66, 87, 67, 88], X[94, 67, 95, 68], X[86, 75, 87, 76], X[77, 88, 78, 89], X[93, 78, 94, 79]]
```

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In[•]:= PD[EPD[X[14,1], Overscript[X,-][2,29], X[3,40], X[43,4], Overscript[X,-][26,5], X[6,95], X[96,7], X[13,8], Overscript[X,-][9,28], X[10,41], X[42,11], Overscript[X,-][27,12],
  X[30,15], Overscript[X,-][16,61], Overscript[X,-][17,72], Overscript[X,-][18,83], X[19,34], Overscript[X,-][89,20], Overscript[X,-][21,92], Overscript[X,-][79,22], Overscript[X,-][68,23], Overscript[X,-][57,24], Overscript[X,-][25,56], X[62,31],
  X[73,32], X[84,33], Overscript[X,-][50,35], X[36,81], X[37,70], X[38,59], Overscript[X,-][39,54], X[44,55], X[58,45], X[69,46], X[80,47], X[48,91],
  X[90,49], X[51,82], X[52,71], X[53,60], Overscript[X,-][63,74], Overscript[X,-][64,85], Overscript[X,-][76,65], Overscript[X,-][87,66], Overscript[X,-][67,94], Overscript[X,-][75,86], Overscript[X,-][88,77], Overscript[X,-][78,93]]]

Out[•]= PD[X[1, 15, 2, 14], X[29, 2, 30, 3], X[40, 4, 41, 3], X[4, 44, 5, 43], X[5, 26, 6, 27],
  X[95, 7, 96, 6], X[7, 97, 8, 96], X[8, 14, 9, 13], X[28, 9, 29, 10], X[41, 11, 42, 10],
  X[11, 43, 12, 42], X[12, 27, 13, 28], X[15, 31, 16, 30], X[61, 16, 62, 17], X[72, 17, 73, 18],
  X[83, 18, 84, 19], X[34, 20, 35, 19], X[20, 89, 21, 90], X[92, 21, 93, 22], X[22, 79, 23, 80],
  X[23, 68, 24, 69], X[24, 57, 25, 58], X[56, 25, 57, 26], X[31, 63, 32, 62], X[32, 74, 33, 73],
  X[33, 85, 34, 84], X[35, 50, 36, 51], X[81, 37, 82, 36], X[70, 38, 71, 37], X[59, 39, 60, 38],
  X[54, 39, 55, 40], X[55, 45, 56, 44], X[45, 59, 46, 58], X[46, 70, 47, 69],
  X[47, 81, 48, 80], X[91, 49, 92, 48], X[49, 91, 50, 90], X[82, 52, 83, 51], X[71, 53, 72, 52],
  X[60, 54, 61, 53], X[74, 63, 75, 64], X[85, 64, 86, 65], X[65, 76, 66, 77],
  X[66, 87, 67, 88], X[94, 67, 95, 68], X[86, 75, 87, 76], X[77, 88, 78, 89], X[93, 78, 94, 79]]

In[•]:= Ks = ReadList["C:\\drorbn\\AcademicPensieve\\People\\Dunfield\\nmd_random_knots"] /.
    i_Integer :> i + 1;

In[•]:= Crossings[Ks[[46]]]

Out[•]= 48

In[•]:= Ks[[46]] // EPD

Out[•]= EPD[X[72,11], X[2,83], X[33,20], Overscript[X,-][14,7], X[30,27], X[74,57], X[21,34], X[6,19], X[60,29], Overscript[X,-][89,92], X[87,50], Overscript[X,-][18,13],
  X[12,73], X[5,94], Overscript[X,-][8,17], X[55,48], X[46,75], Overscript[X,-][91,52], X[71,68], X[69,66], X[58,61], X[49,54], X[76,47], Overscript[X,-][81,40],
  X[95,4], X[63,24], X[28,59], X[39,42], Overscript[X,-][65,62], X[43,84], X[67,70], Overscript[X,-][16,9], Overscript[X,-][77,56], X[82,1], X[23,64], Overscript[X,-][41,80],
  X[93,78], Overscript[X,-][51,90], X[26,31], X[35,32], X[36,3], X[45,86], X[79,38], Overscript[X,-][37,96], X[85,44], Overscript[X,-][10,15], Overscript[X,-][25,22], X[53,88]]
```