

ToPD@ k gives a planar diagram notation for the knot k , which is given in modified DT form.

ToPD@ k _MDT := ToPD@ k =

Block[{a = Abs /@ k , n = Length@ k , o, r}, o = Ordering@a;

Do[If[PlanarGraphQ@Graph[Join@@Table[

Array[{v, # - 1} \rightarrow {v, #} &, 3] \cup

{v, 0} \rightarrow {v, 3}],

Join@@ ({v, #[[1]]} \rightarrow {#[[2]], #[[1]] + (1 - c[[v]] c[[#[[2]]]) / 2},

{v, 3 - #[[1]]} \rightarrow {#[[2]], #[[1]] + (1 + c[[v]] c[[#[[2]]]) / 2} &

/@ ({#, o[[Mod[v - # / 2, n, 1]]]} & /@ {0, 2})),

{v, n}]], r = c;

Break[]], {c, Tuples[{1, -1}, n]};

PD@@ (X_{###} & @@@ Array[{2 # - 1, 2 a[[#]], 2 #, Mod[2 a[[#]] + 1, 2 n, 1]}]

[If[Sign@ k [[#]] == 1, ;;, {2, 3, 4, 1}]]

[If[r[[#]] == 1, ;;, {1, 4, 3, 2}]] &, n)]];