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University of New South Wales
Sydney Australia
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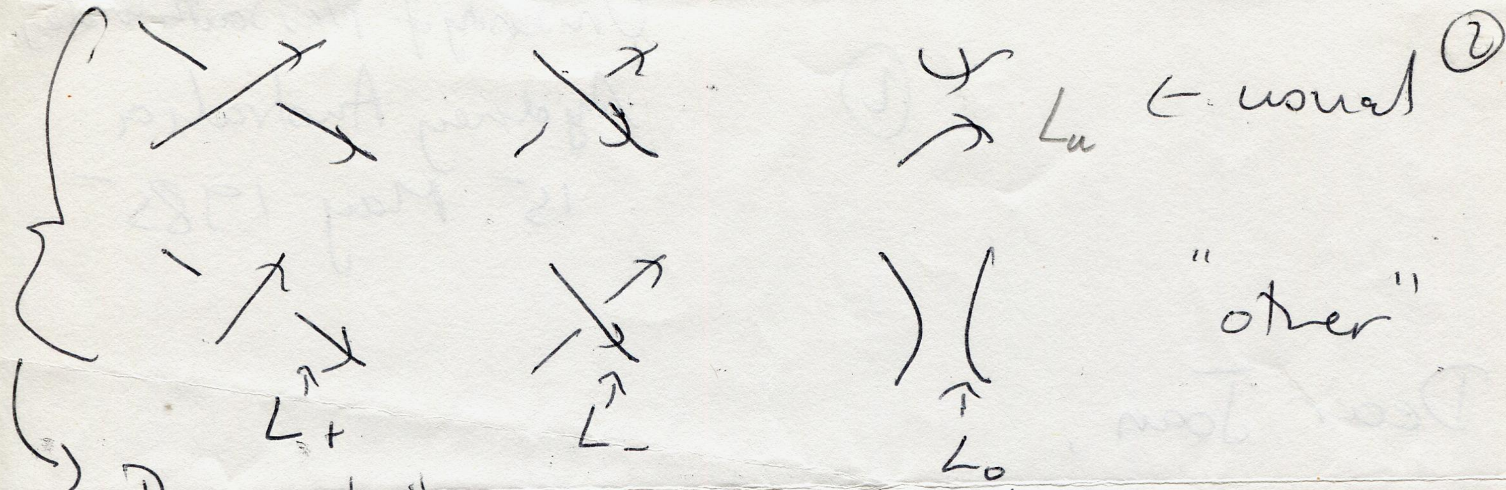
Dear Joan,

I'm not having much of a time down under: I had bad 'flu the first week and then hurt my back playing squash so I've attended a total of one talk at the conference after 3 days!

I did have an observation the other day which sounded interesting. I wanted to share it with you as you may have a better idea what to do with it. There's no one to tell here anyway.

It follows from the unoriented nature of the plait approach that the one variable polynomial satisfies a skein relation with respect to the other way of eliminating the crossing:



The plait approach doesn't see any difference. I think you understand the plait approach and will be able to prove the following immediately:

Let L_+, L_- and L_0 be as above in "other" then $\exists$ integers p and q with

$$V_{L_+} - t^p V_{L_-} = t^q\left(\sqrt{t} - \frac{1}{\sqrt{t}}\right) V_{L_0}$$

Note that if any of L_+, L_- or L_0 is a knot, all 3 are so one can calculate away for knots, and only invoke knots provided one knows p and q.

A little calculus shows that, for knots,

ok
$$V_{L_+} = t^{-1} V_{L_-} + (t-1)\, t^{\frac{1}{2}(V_{L_+}''(1) - V_{L_-}''(1)) - 1} V_{L_0}$$

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