Re: Einstein's math and physical objects

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After much thinking, I believe the description of what happens is
something like the following. I will use A and B for the reference
frames (although originally I think these denoted the two disks.)

As a preliminary thought experiment, imagine a solid rubber cylinder
with axis coinciding with the x−axis. In frame B the cylinder is not
sliding along the x−axis − it is just rotating about the x−axis.
Back in frame A, the cylinder is sliding along the x−axis while it
rotates and it APPEARS TWISTED. Imagine what you would have to do to
the cylinder to make it appear UNtwisted in frame A. You would have to
apply EXTERNAL twisting forces to the cylinder. Suppose you manage to
do this so that the cylinder now APPEARS untwisted in frame A. In
frame B, the cylinder is now twisted and B−observers will explain this
as do to the application of the external twisting forces. A−observers
see a rather odd situation where the cylinder APPEARS untwisted but is
actually experiencing large internal twisting stresses caused by the
external twisting forces. If the external forces are removed, the
cylinder will resume its relaxed shape where it is untwisted in B and
twisted in A.

OK, now consider David's original situation where the rotating disks
accelerate from frame A to frame B and it is ASSUMED that the wires
remain parallel to the x−axis in frame A as the system undergoes
acceleration. I think the important thing to realize is that this can
only happen if complicated EXTERNAL FORCES act on the wires during the
acceleration and continue to act after the acceleration is over. These
external forces will, in fact, distort the wires into a rotating helix
shape in frame B (the wires don't touch) and the helix shape will be
maintained as long as the external forces remain applied.

If these external forces are removed after the acceleration is over,
then the wires will 'relax' and assume a shape due to internal forces
(stresses) alone. This relaxed shape will be the crossed/touching
configuration! From the point of view of B, the wires will now form
essentially straight lines that cross half−way between the disks
(assuming 180 degree relative rotation between the disks in B). From
the point of view of A, the 'relaxed' shape of each wire will be a
helix with VARIABLE RADIUS. As the wires leave one disk the radius of

each helix decreases linearly with distance from the disk until the radius of each helix becomes zero at the halfway point between the disks. The wires cross (touch) at this point. Then the radius of each helix increases again as you move from this point to the second disk.

If, during the acceleration phase, no external forces were applied to the wires, then I believe they will NOT remain parallel to the x−axis in A even though the disks never have any _relative_ rotation in frame A! As odd as it seems, I think that Frame A will see the wires distort during the acceleration into the 'relaxed' variable radius helix configuration described above and touch in the middle. In frame B they will assume the straight line crossing configuration.
[Blasts of criticism welcome!]

Todd