Susan M Abernathy and Patrick M Gilmer\*, Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803. Even and odd Kauffman bracket ideals for genus-1 tangles.
We adapt a basis of Habiro's for the even Kauffman bracket skein module of the solid torus to define bases for the even and odd skein modules of the solid torus relative to two points. We discuss genus-1 tangle embeddings, and define an even and odd version of the Kauffman bracket ideal for genus-1 tangles. These even and odd Kauffman bracket ideals are obstructions to even and odd tangle embeddings. Using our even and odd bases for the relative skein modules, we show how to compute a finite list of generators for the even and odd Kauffman bracket ideals of a genus-1 tangle. We do this explicitly for some genus-1 tangles. We relate these ideals to determinants of closures of genus-1 tangles. We give an example of a genus-1 tangle which cannot be embedded in an unknot but which is not detected by the Kauffman bracket ideal but which is detected by the even and odd Kauffman bracket ideals working in tandem. (Received January 15, 2015)