Twisted Blanchfield Pairings.

Given a symplectic $SL_2\mathbb{C}$-representation $\gamma$ of the group $\pi$ of a knot $k$, there is an associated twisted Blanchfield pairing of the first twisted homology module $H_1(X(k); \gamma)$. Consequently, the homology has the form $A \oplus \overline{A}$ (where $\overline{\gamma}$ denotes the same module with conjugate $\mathbb{Z}[t^\pm]$-structure induced by $t \mapsto t^{-1}$) and the twisted Alexander polynomial $\Delta_\gamma(t)$ has the form $f(t)f(t^{-1})$. Using previous work, we see that when $\gamma : \pi \rightarrow SL_2\mathbb{C}$ is a nonabelian parabolic representation of the group of a 2-bridge knot, $\Delta_\gamma(-1)/\Delta_\gamma(1)$ is a square. This confirms a conjecture of the second and third authors, previously proven in a special case by M. Hirasawa and K. Murasugi. (Received September 09, 2008)