1 Definitions

Definition 1.1. L oriented link with Seifert matrix A, then the first homology of the infinite cyclic covering of the link complement, $H_1(X_\infty;\mathbb{Z})$, has square presentation matrix $tA - A^T$.

The *Alexander polynomial* of L is given by

$$\Delta_L(t) \doteq \det(tA - A^T)$$

where $\doteq$ means "up to a multiplication with a unit $\{\pm t^n\}$ of the Laurent ring $\mathbb{Z}[t, t^{-1}]$".

Remark 1.2. $\mathbb{Z}[t^{\pm 1}]$ is **not** a PID.

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