

# Arrow diagrams on a line and on a circle

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$\left( \begin{array}{l} \text{comes from } y = \bullet \\ \text{which implies} \\ \text{---} \bullet = 0 \end{array} \right) \vec{A}^w(\bullet) \stackrel{?}{\cong} \mathbb{Q}[w_{i>1}]$

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$$\begin{array}{ccc}
 \vec{A}^{\text{cl}}(\uparrow) & \xrightarrow{\alpha} & \vec{A}^w(\uparrow) \cong \mathbb{Q}[\uparrow, w_i] \\
 \downarrow \text{cl} & \uparrow \text{H or near } 1-1 & \downarrow \text{cl: kills all wheels } \circ \\
 \vec{A}^{\text{cl}}(\circ) & \xrightarrow{\alpha} & \vec{A}^w(\circ) \\
 & \uparrow \text{Far from } 1-1 & \parallel \\
 & & \mathbb{Q}[\uparrow]
 \end{array}$$

$\Rightarrow$  There ought to be an Alexander polynomial for long  $w$ -knots, which does not descend to closed  $w$ -knots.  
 It probably does, however, extend the usual Alexander polynomial for long knots.