

Idle question Is there an excellent combinatorial description for "a surface in the complement of a knot diagram"?

Def IF every normal $S^2 \subset (M, T)$ is vertex-linking, say that T is "zero-efficient".

Thm IF (M, T) is zero-efficient, then

* M is irred.

and * $T^{(0)} = \{pt\}$ or $M \cong S^3$

There is an Agol-Hass-Thurston theorem that looks similar to Schrier-Sims. Likely in

<http://arxiv.org/abs/math/0205057>

There's also work by Sedgwick-Schafer-Stefankovic