3-manifold

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Key sources: nLab:3-manifold, *dehn-surgery*

Orientable 3-manifolds can be built by Dehn surgery on framed links in S^3, so surgery data presents every example.

Idea

Low-dimensional topology packages 3-manifolds via surgery: starting from S^3, perform Dehn surgery along framed links to obtain every orientable 3-manifold.

By *dehn-surgery*, every *orientable-manifold* 3-manifold can be presented as a pair (K, r) where K is a *knot* in S^3 and $r = p/q \in \mathbb{Q} \cup \{\infty\}$ (called the **surgery coefficient**).

See also:

- *4-manifold*
- *lens-space*

References

- nLab:3-manifold, *dehn-surgery* | nLab:3-manifold |