

WHAT IS A KNOT?

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1. WHAT IS A KNOT?

$f : S^1 \hookrightarrow \mathbb{R}^3$ embedding, 1-1. With this definition, we will have wild knots. To treat this problem, we can use differentiability or consider this closed curve as a polygon.

2. EQUIVALENT CLASS

Let M and N be two smooth manifolds, and let f and g be smooth embeddings of M into N .

If there is a smooth map $H : M \times (-\epsilon, 1 + \epsilon) \rightarrow N$, then f and g are isotopic. This notion of isotopy defines an equivalent class that is a set of all smooth embeddings from one manifold M to another one N . To prove this equivalent relation, we only need to prove the transitive relation by considering smooth bump functions to let the homotopy be stationary around zero and one.