WHAT IS A KNOT?

WILLIAM CHUANG

1. What is a knot?

$f : S^1 \rightarrowtail \mathbb{R}^3$ embedding, 1-1. With this definition we will have wild knots. To solve 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 $H : M \times (-\epsilon, 1+\epsilon) \to N$, 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.

Date: Aug 21, 2017.