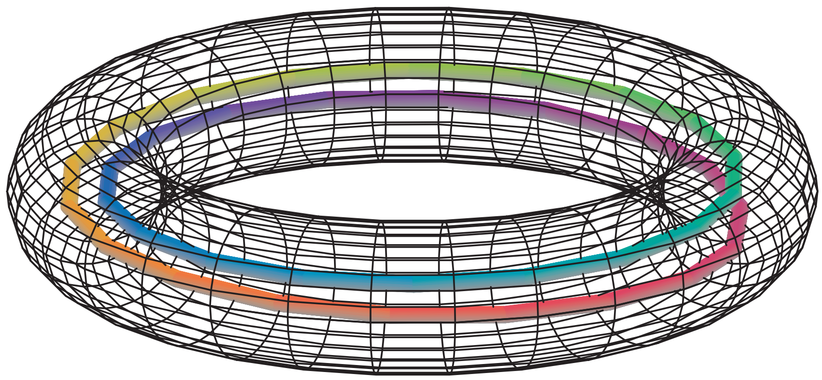

Figure 4.3.1: (A) dyadic selenoid

- Y has an upper semi-continuous monotone decomposition into arcs with the quotient space an arc.

4.2 Arc-like (chainable) continua

(a) The simplest arclike continua with n end points

(b) The pseudo-arc

4.3 Irreducible circle-like continua

(a) Solenoids

(b) The pseudo-circle, pseudo-solenoids

4.3.1 Solenoids

A *solenoid* is a continuum homeomorphic to the inverse limit $\Sigma(\mathbf{p}) = \varprojlim(S^1, f_n)$ of the inverse sequence of unit circles S^1 in the complex plane with bonding maps $f_n(z) = z^{p_n}$, where $\mathbf{p} = (p_1, p_2, \dots)$ is a sequence of prime numbers; it is called a $\mathbf{p}$-*adic solenoid* . The solenoid $\Sigma(2, 2, \dots)$ is known as a *dyadic solenoid* .

Geometrically, solenoid $\Sigma(\mathbf{p})$ can be described as the intersection of a sequence of solid tori $T_1 \supset T_2 \supset \dots$ such that T_{n+1} wraps p_n times around T_n without folding and T_n is ϵ_n-thin, for each $n \in \mathbb{N}$, where $\lim \epsilon_n = 0$. See Figure A.

1. Each solenoid can be constructed (up to a homeomorphism) as the quotient space of the product $C \times I$ by identifying each point $(c, 1)$ with $(h(c), 0)$, where $h : C \to C$ is a homeomorphism of the Cantor set C such