continua X that there are no nonempty proper subcontinua A and B of X with $X = A \cup B$. The first example of such a continuum was given by Brouwer in 1910 (see Figure B, where the first several steps of his construction, simplified by Z. Janiszewski (1888–1920) [2, p. 114] are presented). Finally in 1922 B. Knaster (1893–1980) gave a nice description of this continuum (with the first full proof of its indecomposability) in [3, p. 209-210]. Now the continuum is referred to as the simplest indecomposable continuum, or the horse-shoe continuum, or the B-J-K continuum (for Brouwer, Janiszewski and Knaster).

Finally the common boundary problem of plane domains has been solved in 1928 by K. Kuratowski (1896–1980) who proved in [4] and [5] that every plane continuum which is the common boundary of n open domains either is indecomposable or is the union of two indecomposable continua whenever $n \geq 3$, and when $n = 2$ it either is "monostratic" or has a natural "cyclic structure" in the sense that it is built up from layers naturally ordered in the same way as the individual points of the circle.

We can obtain a homeomorphic copy of the buckethandle continuum using the inverse limit

$$\varprojlim \{X_i, f_i\}_{i=1}^{\infty}$$

where for each $i = 1, 2, \cdots$ let $X_i = [0, 1]$ and $f_i(t) = 2t$ for $0 \leq t \leq 1/2$ and $f_i(t) = -2t + 2$ for $1/2 \leq t \leq 1$.

We can find more in [65, p.22] and [55, p.205].

[1] L. E. J. Brouwer : Zur Analysis Situs, Math. Ann. 68(1910), 422–434.

[2] Z. Janiszewski: Sur les continus irréductibles entre deux points, Journal de l'Ecole Polytechnique (2) 16(1912), 79–170.

[3] K. Kuratowski: Théorie des continus irréductibles entre deux points I, Fund. Math. 3(1922), 200–231.

[4] K. Kuratowski: Sur les coupures irréductibles du plan, Fund. Math. 6(1924), 130–145.

[5] K. Kuratowski: Sur la structure des frontières communes à deux regions, Fund. Math. 12(1928), 20–42.

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14.1.7 Cantor Interaction

Cantor Interaction is a Charatonic's arcwise connected world ...

14.1.8 Pseudo-circle

Pseudo-circle is a strange continuum.

14.1.9 Semicircle Continuum

Semicircle Continuum is a nice continuum.