

[Ageev, S. M.](#)

**Axiomatic method of partitions in the theory of Nöbeling spaces. II. Unknotting theorem.**

(English) [Zbl 1153.54018](#)

*Sb. Math.* 198, No. 5, 597-625 (2007); translation from *Mat. Sb.* 198, No. 5, 3-32 (2007).

This is the second part of a series of three papers in which the author proves the following classical conjecture on a characterization of Nöbeling spaces.

**Theorem.** For every  $2 \leq k < \infty$ , if a strongly  $k$ -universal  $k$  dimensional Polish space is an absolute extensor in dimension  $k$ , then it is homeomorphic to the  $k$  dimensional Nöbeling space  $N_k^{2k+1}$ .

For the definitions, we refer to the review of the first part, see *S. M. Ageev* [*Sb. Math.* 198, No. 3, 299–342 (2007; [Zbl 1147.54019](#))].

In the first part of the series of three papers, the author introduced the axiom system of Nöbeling spaces and discussed several surgery techniques which allow to improve the connectivity properties of partitions. In the present second part the author proves several technical results related to partitions and approximations of maps, and reduces the theorem above to the proof of the consistency of the axiom system of Nöbeling spaces. The third part contains the final step, i.e. that the so-called Nöbeling cores of constructible manifolds satisfy the axiom system of Nöbeling spaces.

Reviewer: [Tamás Mátrai \(Toronto\)](#)

**MSC:**

- [54F65](#) Topological characterizations of particular spaces
- [54C55](#) Absolute neighborhood extensor, absolute extensor, absolute neighborhood retract (ANR), absolute retract spaces (general properties)
- [54F45](#) Dimension theory in general topology
- [55P15](#) Classification of homotopy type

Cited in **6** Documents

**Keywords:**

axiom system of Nöbeling spaces; unknotting; shrinking of perfect resolution

**Full Text:** [DOI](#)