

## **Proponowane tematy prac magisterskich (wersja polskojęzyczna):**

Tytuł: *Operacje Kuratowskiego w zakresie skończenie wielu topologii na jednym zbiorze.*

### Literatura

[1] T. Banakh, O. Chervak, T. Martynyuk, M. Pylypovych, A. Ravsky oraz M. Simkiv, *Kuratowski monoids of  $n$ -topological spaces*, arXiv:1508.07703v4 [math.GN] 4 Oct 2015.

[2] B. J. Gardner oraz M. Jackson, *The Kuratowski closure-complement theorem*. New Zealand J. Math. 38 (2008), 9–44.

[3] Sz. Plewik oraz M. Walczyńska, *The monoid consisting of Kuratowski operations*. J. Math. 2013, Art. ID 289854, 9 pp.

XX

Tytuł: *O zbiorach sum podszeregow szeregu zbieżnego.*

### Literatura

[1] Z. Nitecki, *Subsum Sets: Intervals, Cantor Sets, and Cantorvals*. arXiv:1106.3779

[2] Z. Nitecki, *Cantorvals and subsum sets of null sequences*. Amer. Math. Monthly 122 (2015), no. 9, 862–870.

[3] W. Bielas, Sz. Plewik oraz M. Walczyńska, *On the center of distances*. arXiv:1605.03608.

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Tytuł: *Przestrzenie metryzowalne, które są  $\sigma$ -dyskretne.*

### Literatura

[1] W. D. Gillam, *Embeddability properties of countable metric spaces*. Topology Appl. 148 (2005), no. 1-3, 63–82.

[2] Sz. Plewik oraz M. Walczyńska, *Embeddable properties of metric  $\sigma$ -discrete spaces*. arXiv:1504.08130

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Tytuł: *O przestrzeniach regularnych, które nie są całkowicie regularne.*

#### Literatura

[1] K. C. Ciesielski oraz J. Wojciechowski, *Cardinality of regular spaces admitting only constant continuous functions.* Topology Proc. 47 (2016), 313–329.

[2] A. Mysiior, *A regular space which is not completely regular.* Proc. Amer. Math. Soc. 81 (1981), no. 4, 652–653.

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Tytuł: *O hipotezie Bertranda.*

#### Literatura

[1] M. Aigner oraz G. M. Ziegler, *Proofs from The Book.* Including illustrations by Karl H. Hofmann. Third edition. Springer-Verlag, Berlin, 2004. viii+239 pp.

[2] M. El Bachraoui, *Primes in the Interval [2n, 3n].* Int. J. Contemp. Math. Sci., Vol. 1, 2006, no. 13, 617 - 621

[3] A. Loo, *On the Primes in the Interval [3n, 4n].* Int. J. Contemp. Math. Sciences, Vol. 6, 2011, no. 38, 1871 - 1882

[4] J. Meher oraz M. R. Murty, *Ramanujan's proof of Bertrand's postulate.* Amer. Math. Monthly 120 (2013), no. 7, 650–653.

[5] W. Sierpiński, *Teoria liczb.* 3rd ed. Monografie Matematyczne, Tom XIX. no publisher given, Warszawa, Wrocław, 1950. vi+544 pp.

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Title: *Gra silnie Choquet.*

#### Literatura

[1] L. Yengulalp *Coding strategies, the Choquet game, and domain representability.* Topol. Appl. (2016) 202, 384–396.

[2] G. Choquet, in *Lectures in Analysis.* vol. I, Benjamin, New York, 1969

- [3] F. Galvin, R. Telegarsky *Stationary strategies in topological games* Topol. Appl. 22 (1986)

### **Wymagany zaliczony kurs topologii**

XX

Title: *Przestrzenie reprezentowalne przez pewne częściowe porządkie.*

#### Literatura

- [1] S. Abramsky, A. Jung, in:S. Abramsky , D.M. Gabbay, T.S.E. Maibaum (Eds.)*Handbook of Logic in Computer Science*, vol. III, Oxford University Press, Oxford, 1994.

- [2] H. Bennett, D. Lutzer *Domain representable spaces*, Fund. Math. 189 (2006) 255-268

- [3] K. Martin *Topological games in domain theory* Topol. Appl. 129 (2003), 177-186.

### **Wymagany zaliczony kurs topologii**

XX

Title: *Pewne rodzaje zupełność w topologii.*

#### Literatura

- [1] W. Fleissner, L. Yengulalp *From subcompact to domain representable.* Topol. Appl. (2015) 195, 174-195.

- [2] J. de Groot *Subcomactness and the Baire category theorem* Indag. Math. 22 (1963), 761-767

- [3] H. Bennett, D. Lutzer *Strong completeness properties in topology*, Quest. Answ. Gen. Topol. 27 (2009) 107-124

### **Wymagany zaliczony kurs topologii**

## Topics for Master theses (English version)

Title: *Kuratowski operations on  $n$ -topological spaces.*

## References

- [1] T. Banakh, O. Chervak, T. Martynyuk, M. Pylypovych, A. Ravsky and M. Simkiv, *Kuratowski monoids of  $n$ -topological spaces*, arXiv:1508.07703v4 [math.GN] 4 Oct 2015.

- [2] B. J. Gardner and M. Jackson, *The Kuratowski closure-complement theorem*. New Zealand J. Math. 38 (2008), 9–44.

- [3] Sz. Plewik and M. Walczyńska, The monoid consisting of Kuratowski operations. J. Math. 2013, Art. ID 289854, 9 pp.

Tytuł: *On Cantorvals, being achievement sets*.

## References

- [1] Z. Nitecki, *Subsum Sets: Intervals, Cantor Sets, and Cantorvals*. arXiv:1106.3779

- [2] Z. Nitecki, *Cantorvals and subsum sets of null sequences*. Amer. Math. Monthly 122 (2015), no. 9, 862–870.

- [3] W. Bielas, Sz. Plewik and M. Walczyńska, *On the center of distances*. arXiv:1605.03608.

Title: *Embeddability properties of  $\sigma$ -discrete metric spaces.*

## References

- [1] W. D. Gillam, *Embeddability properties of countable metric spaces*. Topology Appl. 148 (2005), no. 1-3, 63–82.

- [2] Sz. Plewik and M. Walczyńska, *Embeddable properties of metric  $\sigma$ -discrete spaces*. arXiv:1504.08130

Title: *Regular but not completely regular spaces.*

#### References

- [1] K. C. Ciesielski and J. Wojciechowski, *Cardinality of regular spaces admitting only constant continuous functions.* Topology Proc. 47 (2016), 313–329.

- [2] A. Mysiak, *A regular space which is not completely regular.* Proc. Amer. Math. Soc. 81 (1981), no. 4, 652–653.

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Tytuł: *Bertrand's postulate.*

#### References

- [1] M. Aigner and G. M. Ziegler, *Proofs from The Book.* Including illustrations by Karl H. Hofmann. Third edition. Springer-Verlag, Berlin, 2004. viii+239 pp.

- [2] M. El Bachraoui, *Primes in the Interval* [2n, 3n]. Int. J. Contemp. Math. Sci., Vol. 1, 2006, no. 13, 617 - 621

- [3] A. Loo, *On the Primes in the Interval* [3n, 4n]. Int. J. Contemp. Math. Sciences, Vol. 6, 2011, no. 38, 1871 - 1882

- [4] J. Meher and M. R. Murty, *Ramanujan's proof of Bertrand's postulate.* Amer. Math. Monthly 120 (2013), no. 7, 650–653.

- [5] W. Sierpiński, *Teoria liczb.* 3rd ed. Monografie Matematyczne, Tom XIX. no publisher given, Warszawa, Wrocław, 1950. vi+544 pp.

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Title: *The strong Choquet game .*

#### References

- [1] L. Yengulalp *Coding strategies, the Choquet game, and domain representability.* Topol. Appl. (2016) 202, 384–396.

- [2] G. Choquet, in *Lectures in Analysis.* vol. I, Benjamin, New York, 1969

- [3] F. Galvin, R. Telegarsky *Stationary strategies in topological games* Topol. Appl. 22 (1986)

**Required topology course completed**

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Title: *Domain representable spaces.*

References

- [1] S. Abramsky, A. Jung, in:S. Abramsky , D.M. Gabbay, T.S.E. Maibaum (Eds.)*Handbook of Logic in Computer Science*, vol. III, Oxford University Press, Oxford, 1994.

- [2] H. Bennett, D. Lutzer *Domain representable spaces*, Fund. Math. 189 (2006) 255-268

- [3] K. Martin *Topological games in domain theory* Topol. Appl. 129 (2003), 177-186.

**Required topology course completed**

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Title: *Completeness properties in topology.*

References

- [1] W. Fleissner, L. Yengulalp *From subcompact to domain representable*. Topol. Appl. (2015) 195, 174-195.

- [2] J. de Groot *Subcomactness and the Baire category theorem* Indag. Math. 22 (1963), 761-767

- [3] H. Bennett, D. Lutzer *Strong completeness properties in topology*, Quest. Answ. Gen.Topol. 27 (2009) 107-124

**Required topology course completed**