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Spaces with property $(DC(\omega_1))$

Comment.Math.Univ.Carolin. 58,1 (2017) 131 –135.

Abstract: We prove that if X is a first countable space with property $(DC(\omega_1))$ and with a G_δ-diagonal then the cardinality of X is at most $\mathfrak{c}$. We also show that if X is a first countable, DCCC, normal space then the extent of X is at most $\mathfrak{c}$.

Keywords: G_δ-diagonal; property $(DC(\omega_1))$; cardinal; DCCC
AMS Subject Classification: Primary 54D20, 54E35

References

[1] Aiken L.P., *Star-covering properties: generalized Ψ-spaces, countability conditions, reflection*, Topology Appl. **158** (2011), no. 13, 1732–1737.
[2] Arhangel'skii A.V., Buzyakova R.Z., *The rank of the diagonal and submetrizability*, Comment. Math. Univ. Carolin. **47** (2006), no. 4, 585–597.
[3] Arhangel'skii A.V., Burke D.K., *Spaces with a regular G_δ-diagonal*, Topology Appl. **153** (2006), no. 11, 1917–1929.
[4] Buzyakova R.Z., *Cardinalities of ccc-spaces with regular G_δ-diagonals*, Topology Appl. **153** (2006), no. 11, 1696–1698.
[5] Engelking R., *General Topology*, Helderman, Berlin, 1989.
[6] Ginsburg J., Woods R.G., *A cardinal inequality for topological spaces involving closed discrete sets*, Proc. Amer. Math. Soc. **64** (1977), no. 2, 357–360.
[7] Ikenaga S., *Topological concept between Lindelöf and pseudo-Lindelöf*, Research Reports of Nara National College of Technology **26** (1990), 103–108.
[8] Kunen K., Vaughan J., *Handbook of Set-theoretic Topology*, North Holland, Amsterdam, 1984.
[9] Matveev M., *A survey on star covering properties*, Topology Atlas, 1998.
[10] Porter J.R., Woods R.G., *Feebly compact spaces, Martin's axiom, and "diamond"*, Topology Proc. **9** (1984), 105–121.
[11] Shakhmatov D.B., *No upper bound for cardinalities of Tychonoff c.c.c. spaces with a G_δ-diagonal exists*, Comment. Math. Univ. Carolin. **25** (1984), no. 4, 731–746.
[12] Uspenskij V.V., *A large F_σ-discrete Fréchet space having the Souslin property*, Comment. Math. Univ. Carolin. **25** (1984), no. 2, 257–260.
[13] Xuan W.F., Shi W.X., *A note on spaces with a rank* 3*-diagonal*, Bull. Aust. Math. Soc. **90** (2014), no. 3, 521–524.