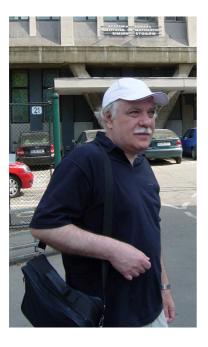
## PREFACE TO THE SPECIAL ISSUE IN MEMORY OF MIHNEA COLTOIU

Mihnea Colţoiu was born in 1954 at Bucharest, a city dear to his soul. The glorious past of the metropolis, shattered by too many historical torments, reverberated in the mellow and witty daily attitude of Mihnea.



His passion for mathematics showed up early. During his high school years he obtained the Bronze Medal at the International Mathematical Olympiad. Between 1974 and 1979 he studied at the Faculty of Mathematics of the University of Bucharest where, under the influence of Martin Jurchescu, he discovered the depth and beauty of Function Theory of Several Complex Variables.

After graduation he joined the National Institute for Scientific and Technical Creation (INCREST), at that time the top research institute of the country in pure mathematics. He has defended a doctoral dissertation in 1985, under the supervision of Constantin Bănică. The topics of his Ph.D. thesis (Convexity in Complex Analysis) will mark his area of

expertise during his entire professional career. His collaboration with Klas Diedriech marks one of the brilliant achievements of analytic pseudoconvexity theory at the turn of the century.

After 1990, the Mathematics Department of INCREST (re)became the Institute of Mathematics of the Romanian Academy (IMAR). Mihnea Colțoiu was a senior researcher and the leader of Complex Analysis and Potential Theory group at IMAR until the end of his life.

In 2006 he was elected a corresponding member of the Romanian Academy.

Mihnea Colțoiu is one of the few contemporary Romanian mathematicians who has created a school. He led, mentoring with diligence and unmatched insight, the research of: Nicolae Mihalache, Viorel Vâjâitu, Cezar Joița, Anca Popa, George Ioniță, Natalia Gașițoi, Ovidiu Preda.

If one would have to choose one word to characterise Mihnea Coltoiu's way of doing Mathematics, this would be elegance. He always favoured ideas over techniques and geometrical insight over formal manipulations.

Mihnea Colţoiu passed away in 2021 at the age of 67, survived by his wife and two children. This special issue of Revue Roumaine de Mathématiques Pures et Appliquées is dedicated to his memory.

We would like to extend our gratitude to all contributors.

## Publications of Mihnea Colțoiu

- M. Colțoiu, Cohomology with compact support for real-analytic spaces. Boll. Unione Mat. Ital. 18-A (1981), 291–297.
- M. Colţoiu and N. Mihalache, A remark on the local Stein-ness problem. Math. Ann. 264 (1983), 333–334.
- M. Colţoiu, The Levi Problem for cohomology classes. Ann. Inst. Fourier 34 (1984), 141–154.
- M. Colţoiu and N. Mihalache, Strongly plurisubharmonic exhaustion functions on 1-convex spaces. Math. Ann. 270 (1985), 63–68.
- M. Colțoiu, On the embedding of 1-convex manifolds with 1-dimensional exceptional set. Comment. Math. Helv. 60 (1985), 548–565.
- M. Colţoiu, A note on Levi's Problem with discontinuous functions. Enseign. Math. 31 (1985), 299–304.
- M. Colţoiu, Convexity in complex analysis (in Romanian). Stud. Cerc. Math. 38 (1986), 28–57.
- M. Colţoiu and N. Mihalache, On the homology groups of Stein spaces and Runge pairs. J. Reine Angew. Math. 371 (1986), 216–220.
- M. Colțoiu, Cohomology with compact support for Stein spaces. J. Reine Angew. Math. 380 (1987), 171–177.
- M. Colțoiu, A remark on a theorem of Vo Van Tan. Trans. Amer. Math. Soc. 307 (1988), 857–859.
- M. Colţoiu, Remarques sur les reunions croissantes d'ouverts de Stein. C. R. Math. Acad. Sci. Paris 307 (1988), 91–94.
- M. Colţoiu and N. Mihalache, Pseudoconvex domains on complex spaces with singularities. Comp. Math. 72 (1989), 241–247.
- M. Colţoiu, Recouvrements de Stein finis pour les espaces complexes. C. R. Math. Acad. Sci. Paris 310 (1990), 397–399.
- 14. M. Coltoiu, Complete locally pluripolar sets. J. Reine Angew. Math. 412 (1990), 108–112.

- M. Colțoiu, Traces of Runge domains on analytic subsets. Math. Ann. 290 (1991), 545–548.
- M. Colţoiu, Local hyperconvexity and local hyperconcavity. In: Complex Analysis. Aspects of Mathematics E 17 (1990), 89-91.
- M. Colţoiu, Some open problems concerning Stein spaces. Rev. Roumaine Math. Pures Appl. 36 (1991), 225–229.
- 18. M. Coltoiu, n-concavity of n-dimensional complex spaces. Math. Z. 210 (1992), 203–206.
- M. Coltoiu, Coverings of 1-convex manifolds with 1-dimensional exceptional set. Comment. Math. Helv. 68 (1993), 469–479.
- M. Coltoiu and A. Silva, Behnke-Stein theorem on complex spaces with singularities. Nagoya J. Math. 137 (1995), 153–160.
- M. Colţoiu and K. Diederich, Convexity properties of analytic complements in Stein spaces. J. Fourier Anal. Appl. 1 (1995), 183–194.
- M. Colțoiu, Stein spaces. A survey. In: S. Coen (Ed.), Seminari di geometria. Universita Bologna, 71–79, 1996.
- 23. M. Colțoiu, A counter-example to the q-Levi problem in  $\mathbb{P}^n$ . J. Math. Kyoto Univ. **36** (1996), 385–387.
- M. Colţoiu and K. Diederich, Open sets with Stein hypersurface sections in Stein spaces. Ann. of Math. 145 (1997), 175–182.
- 25. M. Colțoiu, On Barth's conjecture concerning  $H^{n-1}(\mathbb{P}^n \setminus A, \mathcal{F})$ . Nagoya Math. J. 145 (1997), 99–123.
- M. Colţoiu, q-convexity. A survey. In: V. Ancona et al. (Eds.), Complex Analysis and Geometry XII. Pitman Research Notes in Math. 366 (1997), 83–93.
- M. Colțoiu, On the Oka-Grauert principle for 1-convex manifolds. Math. Ann. 310 (1998), 561–569.
- M. Colţoiu, On 1-convex manifolds with 1-dimensional exceptional set. Rev. Roumaine Math. Pures Appl. 43 (1998), 97–104.
- M. Colţoiu and K. Diederich, Existence of 2-complete neighbourhoods for pseudoconvex domains. J. Geom. Anal. 8 (1998), 21–25.
- M. Colţoiu, On hulls of meromorphy and a class of Stein manifolds. Ann. Sc. Norm. Sup. Pisa (4), 28 (1999), 405–412.
- M.Coltoiu and K. Diederich, The Levi problem on Stein spaces and envelopes of holomorphy. Math. Ann. **316** (2000), 185–199.
- 32. M. Colțoiu, On the relative homology groups of q-Runge pairs. Ark. Math. **38** (2000), 45–52.
- M. Coltoiu and V. Vâjâitu, Locally trivial fibrations with singular one-dimensional Stein fiber over q-complete spaces. Nagoya J. Math. 157 (2000), 1–13.
- M. Coltoiu and K. Diederich, On the coverings of proper families of 1-dimensional complex spaces. Michigan Math. J. 47 (2000), 369–375.
- M. Colțoiu and V. Vâjâitu, On n-completeness of covering spaces with parameters. Math. Z. 237 (2001), 815–831.
- M. Colțoiu and K. Diederich, A remark on non-Hausdorff cohomology groups of analytic complements. Math. Ann. 323 (2002), 486–489.

- M. Colțoiu and M. Tibăr, Steiness of the universal covering of the complement of a 2 dimensional complex singularity. Math. Ann. 326 (2003), 95–104.
- M. Colţoiu, On q-Runge pairs. Ann. Sc. Norm. Super. Pisa Cl. Sci. (5), 2 (2003), 231–235.
- M. Colţoiu, Weakly pseudoconvex domains in 1-convex spaces and the hyperintersection problem. Math. Z. 245 (2003), 217–220.
- M. Colţoiu, On the separation of cohomology groups of increasing unions of (1,1) convexconcave manifolds. J. Math. Kyoto Univ. 45 (2005), 405–409.
- M. Colţoiu, Some remarks about 1-convex manifolds on which all line bundles are trivial. Bull. Sci. Math. 130 (2006), 337–340.
- M. Colţoiu, Convexity properties of coverings of 1-convex manifolds. Math. Z. 256 (2007), 461–464.
- M. Colțoiu and K. Diederich, The Levi problem for Riemann domains over Stein spaces with singularities. Math. Ann. 338 (2007), 283–289.
- 44. M. Colțoiu and M. Tibăr, On the disk theorem. Math. Ann. 345 (2009), 175–183.
- 45. M. Colțoiu and J. Ruppenthal, On Hartogs' extension theorem on on (n-1)-complete compex spaces. J. Reine Angew. Math. **637** (2009), 41–47.
- M. Colţoiu, The Levi problem on Stein spaces with singularities. A survey. Rend. Mat. Appl. (7), 29 (2009), 341–353.
- 47. G. Chiriacescu, M. Colţoiu, and C. Joiţa, Analytic cohomology groups in top degrees of Zariski open sets in ℙ<sup>n</sup>. Math. Z. 264 (2010), 671–677.
- M. Colţoiu and C. Joiţa, The Levi problem in the blow-up. Osaka J. Math. 47 (2010), 943–947.
- M. Colţoiu and C. Joiţa, The disk property of coverings of 1-convex surfaces. Proc. Amer. Math. Soc. 140 (2012), 575–580.
- M. Colţoiu, N. Gaşiţoi, and C. Joiţa, On the image of an algebraic projective space. C. R. Math. Acad. Sci. Paris 350 (2012), 239–241.
- M. Colţoiu, C. Joiţa, and M. Tibăr, q-convexity properties of the coverings of a link singularity. Publ. Res. Inst. Math. Sci. 48 (2012), 409–417.
- M. Colţoiu and C. Joiţa, On the open immersion problem. Math. Ann. 356 (2013), 1203-1211.
- M. Colţoiu and C. Joiţa, Convexity properties of coverings of 1-convex surfaces. Math. Z. 275 (2013), 781–792.
- M. Colţoiu, K. Diederich, and C. Joiţa, On complex spaces with prescribed singularities. Math. Res. Lett. 20 (2013), 857–868.
- M. Colțoiu and C. Joița, On the separation of the cohomology of universal coverings of 1-convex surfaces. Adv. Math. 265 (2014), 362–370.
- M. Colţoiu and C. Joiţa, On the parameterization of germs of two-dimensional singularities. J. Geom. Anal. 25 (2015), 2427–2435.
- M. Colţoiu and C. Joiţa, On Runge-curved domains in Stein spaces. Ann. Sc. Norm. Super. Pisa Cl. Sci. (5), 16 (2016), 1185–1192.
- M. Colţoiu and C. Joiţa, Convexity properties of intersections of decreasing sequences of q-complete domains in complex spaces. Publ. Res. Inst. Math. Sci. 53 (2017), 587–595.

- M. Colțoiu and C. Joița, Finite coverings of complex spaces by connected Stein open sets. Math. Z. 287 (2017), 929–946.
- M. Colțoiu, Some open problems concerning q-convexity and Stein spaces. Complex Var. Elliptic Equ. 64 (2019), 64–67.
- 61. M. Colțoiu and C. Joița, Some problems related to the Levi problem for Riemann domains over Stein spaces. Complex Var. Elliptic Equ. 65 (2020), 713–716.
- M. Colţoiu and C. Joiţa, Geometric convexity properties of coverings of 1-convex surfaces. J. Geom. Anal. **31** (2021), 475–489.
- 63. M. Colțoiu and C. Joița, Projection of connected Stein open subsets via surjective holomorphic maps. Preprint.

Cezar Joița Simion Stoilow Institute of Mathematics of the Romanian Academy cezar.joita@imar.ro Mihai Putinar University of California at Santa Barbara Department of Mathematics mputinar@math.ucsb.edu