Curriculum Vitae

Name: Le Tuan Hoa (Mr.)
Nationality: Vietnamese
Date of birth: August 27th, 1957
Place of birth: Thanh hoa, Vietnam
Marital status: married, two sons
Spouse's name: Dinh Thi Quynh Van, born: April 4th, 1968
1st son: Le Tuan Linh, born: June 6th, 1993
2nd son: Le Tuan Minh, born: February 13th, 1998
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Institute of Mathematics, Vietnam Academy of Science and Technology (IM-VAST)
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Education:

Primary school (1st- 7th grade): 1964 - 1971 in Thanh hoa, Vietnam
High school (8th-10th grade): 1971-1974, Special School in Mathematics of Pedagogical University of Vinh, Vietnam

Academic Degrees:

M.Sc.: 1980, University of Minsk (Belorussia).
Title of the thesis: On arithmetic subgroups of anisatropic algebraic groups
Ph.D.: 1990, Halle University (Germany).
Advisor: Prof. W. Vogel
Title of the dissertation: Affine semigroup rings and applications
Dr. Sc.: 1995, IM-VAST
Title of the Dissertation: Castelnuovo-Mumford regularity and applications

Professional Appointments:

Current positions: Full professor

Previous positions:

- 1981 – 1996: Researcher at IM-VAST
- 1996-2004: Associate professor
- Since 2004: Full Professor:
- May 1998 – May 2011: Deputy Director of IM-VAST
- June 2011 - October 2013: Managing Director, Vietnam Institute For Advanced Study in Mathematics (VIASM)
- June 2013 - August 2017: Director of IM-VAST

Other Scientific Activities:

- 2004 – 2008: Vice –President and General Secretary of the Vietnam Mathematical Society
- 2008 – Aug 2013: President, Vietnam Mathematical Society
- Since 2010: Deputy Editor-in-Chief of Vietnam Journal of Mathematics
- 2012 – 2013: President, South-East Asian Mathematical Society (SEAMS)
- Since 2012: Editor of Southeast Asian Bulletin of Mathematics
- 2019 – 2024: Chair of Section Mathematics of (Vietnam) State Council for Professorship
- 2023 – 2026: elected for an IMU/ CDC Member

Honor:

- Since November 2011: Member of The World Academy of Sciences for the advancement of science in developing countries (TWAS)

- 2017: Hochiminh Prize for Science and Technology (shared with Professors Ngo Viet Trung and Nguyen Tu Cuong) – The most distinguished prize for a scientist awarded by Vietnam Government.

Field of interest:
Commutative Algebra and Algebraic Geometry

Publication: My research focuses on the complexity of algebraic objects. Up today, more then 60 articles were published in international mathematical journals.
MathSciNet Listing:
https://mathscinet.ams.org/mathscinet/search/author.html?mrauthid=234914

5 selected publications:

1. ***N. V. Trung and L. T. Hoa***: Affine semigroups and Cohen-Macaulay rings generated by monomials. Trans. Amer. Math. Soc. 298(1986), 145-167.

2. ***L. T. Hoa and C. Miyazaki:*** Bounds on Castelnuovo-Mumford regularity for generalized Cohen-Macaulay graded rings. Math. Ann. 301(1995), 587-598.

3. ***L. T. Hoa***, Finiteness of Hilbert functions and Castelnuovo-Mumford regularity of initial ideals, Trans. Amer. Math. Soc. 360(2008), 4519-4540.

4. ***L. T. Hoa and T.N. Trung,*** Partial Castelnuovo-Mumford regularities of sums and intersections of monomial ideals, Math. Proc. Cambridge Soc. 149 (2010), 229-246.

5. ***L. T. Hoa,*** Asymptotic behavior of Integer Programming and the stability of the Castelnuovo-Mumford regularity, Mathematical Programming; DOI: 10.1007/s10107-020-01595-x. (2020).

LIST OF PUBLICATIONS

of Le Tuan Hoa

MathSciNet Listing:
https://mathscinet.ams.org/mathscinet/search/author.html?mrauthid=234914

1. **With N. V. Trung**: Affine semigroups and Cohen-Macaulay rings generated by monomials. *Trans. Amer. Math. Soc.* **298**(1986), 145-167. Corrigendum to: "Affine semigroups and Cohen-Macaulay rings generated by monomials" [Trans. Amer. Math. Soc. 298 (1986), no. 1, 145–167; MR0857437]. *Trans. Amer. Math. Soc.* **305** (1988), no. 2, 857.

2. Classification of the triple projections of Veronese varieties. *Math. Nachr.* **128**(1986), 185-197.

3. **With P. D. Dieu and L. C. Thanh:** Average polynomial time complexity of some NP-complete problems. *Theor. Comput. Sci.* **46**(1986), 219-237.

4. On Segre products of affine semigroup rings. *Nagoya Math. J.* **110**(1988), 113-128.

5. Algorithmetical aspects of the problem of classifying multi-projections of Veronese varieties. *Manuscipta Math.* **63**(1989), 317-331.

6. **With M. Fiorentini:** On monomial k-Buchsbaum curves in P^r. *Ann. Univ. Ferrara, Sez. VII, Sc. Mat.* **36**(1990), 159-174.

7.The Gorenstein property depends upon characteristic for affine semigroup rings. *Arch. Math*. **56**(1991), 228-235.

8. **With J. Stueckrad and W. Vogel**: Towards a structure theory for projective varieties of degree = codimension + 2. *J. Pure Appl. Algebra* **71**(1991), 203-231.

9. A note on projective monomial surfaces. *Math. Nachr*. **154**(1991), 183-188.

10. On monomial k-Buchsbaum curves in P^3. *Manuscripta Math*. **73**(1991), 423-436.

11. **With R. Fr\"oberg:** Segre products and Rees algebras of face rings. *Comm. Algebra* **20**(1992), 3369-3380.

12. On minimal free resolutions of projective varieties of degree = codimension + 2. *J. Pure Appl. Algebra*. **87**(1993), 241-250.

13. Koszul homology and generalized Cohen-Macaulay modules. *Acta Math. Vietnamica*. **18**(1993), 91-98.

14. On reduction numbers and Rees algebras of powers of an ideal. *Proc.Amer. Math. Soc.* **119**(1993), 415-422.

15. **With R. M. Miro-Roig and W. Vogel**: On numerical invariants of locally Cohen-Macaulay schemes in P^n. *Hiroshima math. J.* **24**(1994), 299-316.

16. **With W. Vogel:** Castelnuovo-Mumford regularity and hyperplane sections. *J. Algebra*. **163**(1994), 348-365.

17. **With M. Fiorentini**: Some remarks on generalized Cohen-Macaulay rings. *Bull. Belg. Math. Soc*. **1**(1994), 507-519.

18. **With H. Bresinsky, F. Curtis and M. Fiorentini:** On the structure of local cohomology modules for projective monomial curves in P^3. *Nagoya Math. J.* **136**(1994), 81-114.

19. **With S. Zarzuela**: Reduction numbers and a-invariants of good filtrations. *Comm. Algebra*. **22**(1994), 5635-5656.

20. Bounds for the Betti numbers of a projective curve. In Proceeding of the International Conference "*Commutative Algebra*", Vechta 1994 (eds: W. Bruns, J. Herzog, M. Hochster and U. Vetter), pp. 85-88.

21. **With C. Miyazaki**: Bounds on Castelnuovo-Mumford regularity for generalized Cohen-Macaulay graded rings. *Math. Ann*. **301**(1995), 587-598.

22. Bounds for the number of generators of generalized Cohen-Macaulay ideals. *J. Algebra* **178**(1995), 302-316.

23. **With R. M. Miro-Roig:** Bounds for the Betti numbers of generalized Cohen-Macaulay ideals. *Proc. Amer. Math. Soc*. **123**(1995), 2397-2405.

24. A note on the Hilbert-Samuel function in a two-dimensional local ring. *Acta Math. Vietnamica*. **21**(1996), 335-347.

25. Reduction numbers of equimultiple ideals. *J. Pure Appl. Algebra* **109**(1996), 111-126.

26. Postulation number of good filtrations. *Comm. Algebra* **25**(1997), 1961-1974.

27. **With N. V. Trung:** On the Castelnuovo-Mumford regularity and the arithmetic degree of monomial ideals. *Math. Z.* **229**(1998), 519-537.

28. Castelnuovo-Mumford regularity and defining equations of a locally Cohen-Macaulay algebra. *Commutative Algebra, Algebraic Geometry, and Computational Methods (Ed.: D. Eisenbud) , Springer 1999, pp. 301 - 313*.

29. **With H. Bresinsky**: On the reduction number of some graded algebras. *Proc. Amer. Math. Soc.* **127**(1999), 1257 - 1263

30. **With H. Bresinsky:** Minimal generating sets for a family of monomial curves in A^4. *Commutative Algebra and Algebraic Geometry (ed. F. Van Oystaeyen), Lect. Notes in pure appl. Math. V. **206**(1999)*, pp. 5 - 14

31. **With H. Allsop**: On quotient between length and multiplicity, *Comm. Algebra* **28** (2000), 815-828

32. **With H. Bresinsky**: On hereditary problems between I and in(I), *Acta Mathematica Vietnamica* **26**(2001), 219-230.

33. **With J. Herzog and N.V. Trung**, Asymptotic linear bounds for the Castelnuovo-Mumford regularity, Trans. Amer. Math. Soc. 354(2002), 1793-1809.

34. Asymptotic behavior of reduction numbers, Proc. Amer. Math. Soc. 130 (2002), 3151-3158.

35. *Đại số máy tính: Cơ sở Grobner*, NXB ĐHQG Hà Nội 2003, 290 tr. (Computer Algebra: Groebner bases, in Vietnamese).

36. **With J. Stueckrad**, Castelnuovo-Mumford regularity of simplicial toric rings, J. Algebra 259 (2003), 127-146

37. **With Eero Hyry,** On local cohomology and Hilbert function of powers of ideals, *manuscripta math.* 112(2003), 77-92.

38. **With N.V. Trung,** Borel-fixed ideals and reduction number, *J. Algebra* **270** (2003), 335-346.

39. **With H. Bresinsky,** the k-Buchsbaum property for polynomial ideals, *J. Math. Kyoto Univ.* **43** (2003), 699--717.

40. **With Eero Hyry,** Castelnuovo–Mumford regularity of initial ideals, *J. Symb. Computation*, 38 (2004), 1327-1341.

41. Some computational problems in Commutative Algebra and Algebraic Geometry, In: "*Proceedings of VI-th Vietnamese Mathematical Conference* (Eds: H.H. Khoai, D.T. Thi and D.L. Van), VNU 2005, pp. 33-58.

42. Đại số tuyến tính qua ví dụ và bài tập, NXB ĐHQG Hà Nội 2006, 448 tr. (Linear Algebra: examples and problems, in Vietnamese).

43. **With E. Hyry**, Castelnuovo–Mumford regularity of canonical and deficiency modules, *J. Algebra*, **305** (2006), 877-900. Corrigendum to "Castelnuovo-Mumford regularity of canonical and deficiency modules'[J. Algebra 305 (2) (2006) 877–900] [MR2266858]. J. Algebra **323** (2010), no. 3, 864–865.

44. Stability of associated primes of monomial ideals, *Vietnam. J. Math.* **34**(2006), No.4, 473-487.

45. **With T. N. Trung**, Castelnuovo–Mumford regularity of sums of powers of polynomial ideals, *Comm. Algebra* **36**(2008), 806-820.

46. **With D. T. Ha**, Castelnuovo–Mumford regularity of some modules, *Comm. Algebra* **36**(2008), 992-1004.

47. Finiteness of Hilbert functions and Castelnuovo-Mumford regularity of initial ideals, *Trans. Amer. Math. Soc.* **360**(2008), 4519-4540.

48. **With. M. Hellus and J. Stueckrad**, Grobner bases of simplicial toric ideals, *Nagoya Math. J.* **196** (2009), 1-19.

49. **With. M. Hellus and J. Stueckrad**, Castelnuovo-Mumford regularity and reduction number of some monomial curves, *Proc. Amer. Math. Soc.* **138**(2010), 27-35.

50. **With T.N. Trung,** Partial Castelnuovo-Mumford regularities of sums and intersections of monomial ideals, Math. Proc. Cambridge Soc. **149** (2010), 229-246.

51. **With N. D. Tam**, On some invariants of a mixed product of ideals, Arch. Math. **94** (2010), 327-337.

52. **With D. H. Giang**, On local cohomology of a tetrahedral curve, *Acta Math. Vietnam.* **35** (2010), 229-241.

53. **With M. Chardin and D.T. Ha,** Castelnuovo-Mumford regularity of Ext modules and homological degree, *Trans. Amer. Math. Soc.* **363** (2011), 3439-3456

54. **With L.X. Dung,** Castelnuovo-Mumford regularity of associated graded modules and fiber cones of filtered modules, *Comm. Algebra* **40** (2012), 404-422.

55. **With M. Morales,** Non-linear behaviour of Castelnuovo–Mumford regularity**,** *Journal of Algebra* **356** (2012), 207 – 215.

56. **With L. X. Dung,** Dependence of Hilbert coefficients, *Manu. Math.* **149** (2016), Issue 1, pp 235-249 (DOI .1007/s00229-015-0726-6); Correction: DOI: 10.1007/s00229-017-0975-y.

57. **With T. N. Trung,** Castelnuovo-Mumford regularity of symbolic powers of two-dimensional square-free monomial ideals, *J. Comm. Algebra* 8 (2016), Issue 1, pp 77-88 (DOI: 10.1216/JCA-2016-8-1-77).

58. **With K. Kimura, N. Terai and T. N. Trung,** Stability of Depths of Symbolic Powers of Stanley-Reisner Ideals*, J. Algebra* **473** (2017) 307–323. http://dx.doi.org/10.1016/j.jalgebra.2016.10.036

59. **With T. N. Trung,** Stability of Depth and Cohen-Macaulayness of Integral Closures of Powers of Monomial Ideals, *Acta Math. Vietnam* **43** (2018), 67-81; DOI 10.1007/s40306-017-0225-0

60. **With L. X. Dung,** A note on Castelnuovo-Mumford regularity and Hilbert coefficients, *Journal of Algebra and Its Applications*, Vol. 18, No. 10, 1950191 (2019); DOI: 10.1142/S02194988195019134.

61. Powers of Monomial Ideals and Combinatorics, In "New Trends in Algebras and Combinatorics", Proceedings of the 3rd International Congress in Algebras and Combinatorics (ICAC2017), Ed. K P Shum, E. Zelmanov, P. Kolesnikov, and S M Anita

Wong, Pages:149–178, World Scientific 2020, https://doi.org/10.1142/9789811215476_0012.

62. The Development of Mathematical Research in Vietnam at a Glance, *The Mathematical Intelligencer,* **42**(4) (2020), pp. 50-58; DOI 10.1007/s00283-020-09992-y;

63. Asymptotic behavior of Integer Programming and the stability of the Castelnuovo-Mumford regularity, *Mathematical Programming* **193**(2022) 157 - 194, DOI: 10.1007/s10107-020-01595-x.

64. Maximal Generating Degrees of Powers of Homogeneous Ideals, *Acta Math. Vietnam*. **47**(2022), 19–37; DOI 10.1007/s40306-021-00469-4.

65. Maximal generating degrees of integral closures of powers of monomial ideals, *Journal of Algebraic Combinatorics*, DOI 10.1007/s10801-021-01110-1