

## SHORT CURRICULUM OF MERCEDE MAJ

Degree in Mathematics in 1976, at the University of Naples, Italy.

1975-1976 CNR scholarship for undergraduate students, University of Naples, Italy.

1977-1982 CNR scholarship for graduate students, University of Naples, Italy.

1982-1987 Assistant Professor of Algebra, University of Naples.

1987-1996 Associate Professor of Algebra, University of Naples.

1996-1999 Professor of Algebra, University of Salerno.

1999- Full Professor of Algebra at the University of Salerno

Main research interest: Group Theory

Author of more than 80 papers published in international journals.

Author of two Algebra books, written with Mario Curzio and Patrizia Longobardi, and a Discrete Mathematics book, written with Costantino Delizia, Patrizia Longobardi and Chiara Nicotera.

PhD students: Lucia Spiezia, Costantino Delizia, Chiara Nicotera, Maria Tota, Carmela Sica, Antonio Tortora, Annamaria Lucibello, Diana Imperatore, Maurizio Meriano, Serena Siani, Carmine Monetta, Marialaura Noce.

1998-2000, 2000-2002, 2002-2004, 2007-2009, 2009-2011 (end October 2013), 2015-2018 (end 5/2/2020) Scientific coordinator of the research unit of Salerno, a part of the national project PRIN "Group Theory and Applications"

1998-2019 Scientific coordinator of the research project FARB "Classes of Groups" University of Salerno.

Organizer of eight International Conferences in Group Theory (Ischia Group Theory/Users/mercedes/Desktop/alg1 febbraio 2018 2 appello 1 traccia copia 2.tex 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018) , and editor of their Proceedings (2004 AMS C.M., 2006, 2008, 2010 W.S.P. and 2012, 2014, 2016, 2018 I.J.G.T.). Organizer of the special session "Group Theory" in the first

Joint International Meeting of the Italian and Spanish Mathematical Societies (RSME-SCM-SEMA-SIMAI-UMI) Bilbao (Spain), 30 June - 4 July 2014, in the first Joint Meeting Brazil-Italy in Mathematics Rio de Janeiro (Brasil), 29 August - 2 September 2016, and in the "Joint meeting of the UMI, the SIMAI and the PTM", Wroklaw, Polonia, dal 17 al 20 settembre 2018.

Main speaker in several International meetings.

1999 - 2013 Member of the collegio dei Docenti del Dottorato in Scienze Matematiche, sedi consorziate University of Napoli Federico II, Seconda University of Napoli, University of Salerno".

1996 -2002 President of the "Consiglio di Corso di Laurea in Matematica" University of Salerno.

2002 - 2005 President of the "Consiglio di Area Didattica in Matematica" University of Salerno.

2013 - 2017 President of the "Facoltà di Scienze MM.FF.NN. dell'Univeristà degli Studi di Salerno".

Member of U.M.I. and of A.M.S.

Referee for many international journals.

Member of the Scientific Committee of "L' Algebra e le sue Aplicazioni" Collana Interdiscipline ARACNE Editrice

## LIST OF PUBLICATIONS OF MERCEDE MAJ

### Papers

**M. Herzog, P. Longobardi, M. Maj** The second maximal groups with respect to the sum of element orders, *Journal of Pure and Applied Algebra* (2021), to appear

**R. Esteban-Romero, P. Longobardi, M. Maj** A generalization to Sylow permutability of pronormal subgroups of finite groups, *Journal of Algebra and Its Applications*, 19 (2020), 2050052-2050065.

**L.A. Kurdachenko, P. Longobardi, M. Maj** Groups with numerical restrictions on minimal generating sets, *International Journal of Group Theory* 2 (2020), 95-111.

**P. Longobardi, M. Maj** Small doubling in  $m$ -Engel groups, *International Journal of Group Theory* 4 (2020), 277-291.

**M. Herzog, P. Longobardi, M. Maj** Sums of element orders in groups of order  $2m$  with  $m$  odd, *Communications in Algebra*, 47 (2019), 2035-2048.

**L.A. Kurdachenko, P. Longobardi, M. Maj and I.Ya Subbotin** Groups with finitely many isomorphic classes of non-abelian subgroups, *J. Algebra*, 507 (2018), 439-466,.

**M. Herzog, P. Longobardi, M. Maj** Properties of finite and periodic groups determined by their elements orders (a survey), *Group Theory and Computation*, Indian Statistical Institute Series , Editors N.S. Narasimha Sastry, Manoj Kumar Yadav , Springer (2018), pp. 59-90.

**M. Herzog, P. Longobardi, M. Maj** Two new criteria for solvability of finite groups, *J. Algebra*, 511 (2018), 215-226.

**L-C Kappe, P. Longobardi, M. Maj** On autocommutators and the autocommutator subgroup in infinite abelian groups, *Forum Mathematicum*, 30 (4) (2018), 877-885,.

- M. Herzog, P. Longobardi, M. Maj** An exact upper bound for sums of element orders in non-cyclic finite groups, *Journal of Pure and Applied Algebra*, 222 (7) (2018), 1628-1642.
- G. Freiman, M. Herzog, P. Longobardi, M. Maj, Y.V. Stanchescu** Small doubling in ordered nilpotent groups of class 2, *European Journal of Combinatorics*, 67 (2018), 87-95
- L-C Kappe, P. Longobardi, M. Maj** On Subsets and Subgroups Defined by Commutators and Some Related Questions In book: *Groups, Modules, and Model Theory - Surveys and Recent Developments* (2017), 175-189
- G. Freiman, M. Herzog, P. Longobardi, M. Maj, A. Plagne, Y.V. Stanchescu** Small doubling in ordered groups: Generators and structure, *Groups, Geometry, and Dynamics*, 11 (2) (2017), 58512
- G. Freiman, M. Herzog, P. Longobardi, M. Maj, A. Plagne, D.J.S. Robinson, Y.V. Stanchescu** On the structure of subsets of an orderable group with some small doubling properties, *Journal of Algebra* 445(1) (2016), 30726.
- G. Freiman, M. Herzog, P. Longobardi, M. Maj, Y.V. Stanchescu** A small doubling structure theorem in a Baumslag-Solitar group, *European J. Combin.*, 44 (2015), 106-124.
- M. Herzog, P. Longobardi, M. Maj** Some results on products of finite subsets in groups, C.M. Campbell, M.R. Quick, E.F. Robertson, C.M. Roney-Dougal London Mathematical Society Lecture Note Series 422 (2015) - *Groups St Andrews 2013*, 286-305 Cambridge Cambridge University Press. ISBN:9781107514546
- G. Freiman, M. Herzog, P. Longobardi, M. Maj, Y.V. Stanchescu** Direct and inverse problems in additive number theory and in non-abelian group theory, *European J. Combin.*, 40 (2014), 42-54.
- G. Freiman, M. Herzog, P. Longobardi, M. Maj** Small doubling in ordered groups, *J. Austral. Math. Soc.*, 96 (2014), 316-325.
- P. Longobardi, M. Maj, D.J.S. Robinson** Recent results on groups with few isomorphism classes of derived subgroups, *Contemporary Mathematics*, 611 (2014), 121-135.
- M. Herzog, G. Kaplan, P. Longobardi, M. Maj** Products of subsets of groups by their inverses, *Beitrage zur Algebra und Geometrie/Contributions to Algebra and Geometry*, 55, no. 2 (2014), 311-346.
- P. Longobardi, M. Maj, D.J.S. Robinson, H. Smith** On groups with two isomorphic classes of derived subgroups, *Glasgow Mathematical Journal* 2013), 1-14 doi: 10.1017/S0017089512000821.
- P. Longobardi, M. Maj, D.J.S. Robinson** Locally finite groups with finitely many isomorphism classes of derived subgroups, *J. Algebra*, 393 (2013), 102-119.
- D. Chillag, P. Longobardi, M. Maj** Groups with reality and conjugacy conditions, *International Journal of Group Theory*. 1, no. 2 (2012), 25-38.
- M. Herzog, P. Longobardi, M. Maj** On infinite Camina groups. *Comm. Algebra*, 39 (2011) Pag.4403-4419.
- M. Herzog, P. Longobardi, M. Maj** Engel conditions on orderable groups and in combinatorial problems (a survey). In: *Groups St Andrews 2009 in Bath*,

- London Mathematical Society Vol. 387, (2011) Pag.283-296.
- M. Herzog, P. Longobardi, M. Maj** On a graph related to the maximal subgroups of a group. *Bull. Austral. Math. Soc.*, 81 (2010), 317-328.
- P. Longobardi, M. Maj, H. Smith** Groups in which normal closures of elements have boundedly finite rank, *Glasgow Math. J.*, 51 (2009) 341-345.
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- M. Herzog, P. Longobardi, M. Maj** On generalized FC-groups, *J. Group Theory*, 11 (2008), 105-118.
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- P. Longobardi, M. Maj, H. Smith** Groups in which the derived groups of all 2-generator subgroups are cyclic, *Rend. Sem. Mat. Univ. Padova*, 115 (2006), 29-40.
- M. Herzog, P. Longobardi, M. Maj** On the number of commutators in groups, Proceedings of Ischia Group Theory 2004 (2004), Contemporary Mathematics, A.M.S., 181-192.
- P. Longobardi, M. Maj, H. Smith** Groups with  $H/\text{core}(H)$  satisfying max or min for all subgroups  $H$ , *J. Algebra*, 280(1) (2004), 180-189.
- P. Longobardi, M. Maj, A. Rhemtulla** On solvable  $R^*$ -groups, *J. Group Theory*, 6 (2003), 499-503.
- M. Herzog, P. Longobardi, M. Maj** Groups with all elements of finite length, *J. Algebra*, 263 (2003), 177-187.
- M. Herzog, P. Longobardi, M. Maj** Elements of finite length in groups, *J. Group Theory*, 5 (2002), no.3, 317-323.
- M. Herzog, P. Longobardi, M. Maj** Elements and groups of finite length, Proc. "Groups St Andrews 2001 in Oxford", L.M.S. L.N.S. 304-305 (2003) Cambridge University Press.
- P. Longobardi, M. Maj, H. Smith, J. Wiegold** Torsion-free groups isomorphic to all of their non-nilpotent subgroups, *J. Austral. Math. Soc.*, 71 (2001), no.3, 339-347.
- P. Longobardi, M. Maj** Groups satisfying conditions on 2-generator subgroups, *Rend. Sem. Mat. Fis. Milano*, 69 (1999-2000), 171-181.
- M. Herzog, P. Longobardi, M. Maj, A. Mann** On generalized Dedekind groups and Tarski super monsters, *J. Algebra*, 226 (2000), 690-713.
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- P. Longobardi, M. Maj** Semigroup identities and Engel groups, *Proc. of "Groups St Andrews 1997 in Bath"*, L.M.S. L.N.S. 261 (1999), Cambridge University Press, 527-531.
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- P. Longobardi, M. Maj, A. Rhemtulla** Groups with no free subsemigroups, *Trans. Amer. Math. Soc.*, 347 (1995), no.4, 1419-1427.
- P. Longobardi, M. Maj, H. Smith** A note on locally graded groups, *Rend. Sem. Mat. Univ. Padova*, 94 (1995), 275-277.
- P. Longobardi, M. Maj, H. Smith** A Note on Normal Cores in Soluble Groups of Finite Rank, *Algebra Colloq.*, 1 (1994), no.3, 253-256.
- Y. Berkovich, P. Longobardi, M. Maj** Finite and locally solvable periodic groups with given intersections of certain subgroups, *Note di Matematica*, 14 (2), (1994), 147-154.
- M. Herzog, P. Longobardi, M. Maj** On a combinatorial problem in group theory, *Israel J. of Math.*, Issue dedicated to J. G. Thompson, 82 (1993), no.1-3, 329-340.
- P. Longobardi, M. Maj** Some remarks on PN-sequenceable groups, *Arch. Math. (Basel)*, 60 (1993), 15-19.
- P. Longobardi, M. Maj** Finitely generated soluble groups with an Engel condition on infinite subsets, *Rend. Sem. Mat. Univ. Padova*, 89 (1993), 97-102.

- P. Longobardi, M. Maj, A. Rhemtulla** Covering a group with isolators of finitely many subgroups, *Glasgow Math. J.*, 35 (1993), 253-259.
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- P. Longobardi, M. Maj, A. Rhemtulla** Residually solvable PSP-groups , *Boll. Un. Mat. It.*, (7) 7-B (1993), 253-261.
- P. Longobardi, M. Maj** Alcune classi di gruppi infiniti non modulari a quozienti propri modulari, *Istituto Lombardo Accad. Sci. Lett. Rend.*, A 126 (1992), no.1-2, 157-175.
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- M. Curzio, P. Longobardi, M. Maj, A. Rhemtulla** Groups with many rewritable products, *Proc. Amer. Math. Soc.*, 115 (1992), no. 4, 931-934.
- P. Longobardi, M. Maj, A. Rhemtulla** Infinite groups in a given variety and Ramsey's theorem, *Comm. Algebra*, 20 (1) (1992), 127-139.
- P. Longobardi, M. Maj** The classification of groups with the small squaring property on 3 sets, *Bull. Austral. Math. Soc.*, 46 (1992), no.2, 263-270.
- M. Maj** On the derived length of groups with some permutational property, *J. Algebra* 136 (1991), 86-91.
- P. Longobardi, M. Maj, J. Wiegold** Gruppi con identità semigruppali: su una congettura di M. V. Sapir, *Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei*, (9) Mat. Appl. 2 (1991), no.3, 191-196.
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- M. Maj** Some remark on groups with permutable subgroup product, *Comm. Algebra* 17 (1989), 2539-2555.
- P. Longobardi, M. Maj, A. Rhemtulla** Periodic groups with permutable subgroup products, *Math. Proc. Camb. Phil. Soc.*, 106 (1989), 431-437.
- P. Longobardi, M. Maj** Epimorfismi  $v$ -completi tra reticoli di sottogruppi normali, *Rend.Sem. Mat. Univ. Padova*, 79 (1988), 275-280.
- P. Longobardi, M. Maj** On the number of generators of a finite group, *Arch. Math.*, 50 (1988), 110-112.
- P. Longobardi, M. Maj** On groups in which every product of four elements can be reordered, *Arch. Math. (Basel)* 49 (1987), no. 4, 273-276.
- P. Longobardi, M. Maj** On the nilpotence of groups with a certain lattice of normal subgroups, *Proc. of "Group Theory - Brixen/Bressanone - 1986"* (O. H. Kegel, F. Menegazzo, G. Zacher eds.), L. N. M. 1281, (1987) Springer-Verlag, Berlin - Heidelberg - New York, 107-114.
- P. Longobardi, M. Maj** Finite groups with nilpotent commutator subgroups having a distributive lattice of normal subgroups, *J. Algebra*, 101 (1986), 251-261.
- P. Longobardi, M. Maj** Elementi neutri nel reticolo dei sottogruppi normali di un gruppo finito supersolubile, *Boll. U.M.I.*, (6) 5-A (1986), 121-128.
- P. Longobardi, M. Maj** Sui sottogruppi finitamente generabili di alcuni gruppi risolubili, *Ann. Mat. Pura Appl.*, (4) 143 (1986), 373-383.

- M. Curzio, P. Longobardi, M. Maj, D. Robinson** A permutational property of groups, Arch. Math. (Basel), 44 (1985), 385-389.
- P. Longobardi, M. Maj** Su una classe di gruppi proiettivamente invariante, Ricerche Mat., 24 (1985), 325-332.
- P. Longobardi, M. Maj** Una proprietà dei p-gruppi metaciclici, Rend. Accad. Sci. Fis. Mat. Napoli, (4) 51 no.2 (1984), 9-14.
- P. Longobardi, M. Maj** Su alcuni gruppi con il reticolo dei sottogruppi normali isomorfo al reticolo dei sottogruppi normali di un prodotto libero, Rend. Mat. (4) 3, VII (1983), 725-734.
- M. Curzio, P. Longobardi, M. Maj** Su di un problema combinatorio in teoria dei gruppi, Atti Acc. Naz. Lincei, Serie VIII, vol. LXXIV, (1983), 136-142.
- A. Leone, M. Maj** Non submodular finite groups with submodular proper quotient, Rend. Acc. Sci. Fis. Napoli, 74 (1982), 136-142
- A. Leone, M. Maj** Minimal non submodular finite groups", Ricerche Mat. 31 (1982), 377-388.
- P. Longobardi, M. Maj** Determinazione dei T2-gruppi finiti, Ann. Mat. Pura Appl., (4) 128 (1981), 85-121.
- P. Longobardi, M. Maj** Su di un teorema di Chapman-Scorza, Ricerche Mat., 29 (1980), 351-369.
- P. Longobardi, M. Maj** Alcune osservazioni sui gruppi a immagini endomorfe caratteristiche, Ricerche Mat., 28 (1979), 159-167.
- P. Longobardi, M. Maj** Su di un teorema di Heineken, Riv. Mat. Univ. Parma, (4) 2 (1976), 315-320.

### Books

- M. Curzio, P. Longobardi, M. Maj** LEZIONI DI ALGEBRA, Liguori, Napoli, 1994, I ristampa 1996, II ristampa 2013.
- M. Curzio, P. Longobardi, M. Maj** ESERCIZI DI ALGEBRA - UNA RACCOLTA DI PROVE D'ESAME SVOLTE, Liguori, Napoli, 1995, II edizione 2011
- C. Delizia, P. Longobardi, M. Maj, C. Nicotera** MATEMATICA DISCRETA, MacGraw Hill, Milano, 2009.

### Editorships

- Z. Arad, M. Bianchi, W. Herfort, P. Longobardi, M. Maj, C.M. Scoppola** (2006) ISCHIA GROUP THEORY 2004 - Proceedings of a Conference in Honour of Marcel Herzog, March 31-April 3, 2004, Naples (Italy). ISBN: 13:978-0821837115. : American Mathematical Society (UNITED STATES).
- T. Hawkes, P. Longobardi, M. Maj** (2007) ISCHIA GROUP THEORY 2006 - Proceedings of a Conference in Honour of Akbar Rhemtulla, Ischia, Naples, Italy, 29 March-1 April 2006. ISBN: 13:978-981-270-735-2. : WORLD SCIENTIFIC PUBLISHING (SINGAPORE).

- M. Bianchi, P. Longobardi, M. Maj, C.M. Scoppola** (2009) ISCHIA GROUP THEORY 2008, Proceedings of the Conference, Ischia, Naples, Italy, 1-4 April 2008. ISBN: 978-139-789-814-2. WORLD SCIENTIFIC PUBLISHING (SINGAPORE).
- M. Bianchi, P. Longobardi, M. Maj, C.M. Scoppola** (2012) ISCHIA GROUP THEORY 2010, Proceedings of the Conference, Ischia, Naples, Italy, 14-17 April 2010. ISBN: 978-981-435-038-9. WORLD SCIENTIFIC PUBLISHING (SINGAPORE).
- M. Bianchi, P. Longobardi, M. Maj, C.M. Scoppola** (2013) ISCHIA GROUP THEORY 2012, Proceedings of the Conference, Ischia, Naples, Italy, 26-29 March 2012. International Journal of Group Theory , Vol 2 No. 1, March 2013. ISBN: 2251-7650.
- M. Bianchi, P. Longobardi, M. Maj, C.M. Scoppola** (2015) ISCHIA GROUP THEORY 2014, Proceedings of the Conference, Ischia, Naples, Italy, 1-5 April 2014. International Journal of Group Theory , Vol 4 No. 1-2-3, March-June-September 2015. ISBN: 2251-7650.
- M. Bianchi, P. Longobardi, M. Maj, C.M. Scoppola** (2018) ISCHIA GROUP THEORY 2016, Proceedings of the Conference, Ischia, Naples, Italy, 29 March-2 April 2016. International Journal of Group Theory , Vol 7 No. 1, 2, 3, March 2018. ISBN: 2251-7650.
- M. Bianchi, P. Longobardi, M. Maj, C.M. Scoppola** (2019) ISCHIA GROUP THEORY 2018, Proceedings of the Conference, Ischia, Naples, Italy, 19-24 March 2018. International Journal of Group Theory , ISBN: 2251-7650.