

MALUSA' Marco Giovanni

Dipartimento di Scienze dell'Ambiente e della Terra
 Università di Milano-Bicocca, Piazza della Scienza U4, 20126 – Milano
 www.disat.unimib.it

EDUCATION

- 2004 **PhD in Earth Sciences**, *CNR-IGG – University of Torino*
 1997 **MSc in Geological Sciences**, *University of Torino (cum laude)*

PROFESSIONAL EXPERIENCE

- since 1-10-2018 **Associate professor**, University of Milano-Bicocca
 since 2010 Researcher, tenured position, University of Milano-Bicocca
 2007-2009 Researcher in tenure-track, *University of Milano-Bicocca*
 since 2007 Aggregate Professor, *University of Milano-Bicocca*
 2005-2006 Adjunct lecturer, *University of Milano-Bicocca*
 2002-2006 Researcher for geological mapping projects (ex art. 23), *CNR-IGG Torino*
 1999-2001 Professional geologist
- Other professional appointments:*
- since 2023 Member of the Doctoral School Didactic Commission, *University of Milano-Bicocca*
 since 2022 Member of the University Commission for the recognition of PhD degrees obtained abroad
 since 2021 **Coordinator of the PhD Course in Chemical, Geological and Environmental Sciences**,
University of Milano-Bicocca
 since 2021 Area-GEO Representative in the board of the Dept. of Earth and Environmental Sciences
 2020 Responsible for the curriculum in Geological Sciences, PhD Course in Chemical, Geological
 and Environmental Sciences, *University of Milano-Bicocca*
 since 2020 Member of the PhD Teaching Board in Chemical, Geological and Environmental Sciences
 (cycles XXXVI-), *University of Milano-Bicocca*
 2017- Member of the timetable committee of the BSc and MSc courses in Geological Sciences
 2014-2016 Member of the PhD Teaching Board in Chemical, Geological and Environmental Sciences
 (cycles XXX, XXXI, XXXII), *University of Milano-Bicocca*
 2013 Member of the PhD Teaching Board in Sciences (cycle XXIX), *University of Milano-
 Bicocca*
 2008-2012 Member of the PhD Teaching Board in Earth Sciences (cycles XXIV, XXV, XXVI, XXVII,
 XXVIII), *University of Milano-Bicocca*
 since 2008 Head of the Laboratory for Fission Track Analysis, *University of Milano-Bicocca*
 2008-2016 Member of the Scientific Panel of CUDaM (Milano-Bicocca University Centre for Dating)
 2018-2020 INGV-ONT Research Associate
 2008-2011 CNR-IGG Research Associate

Professional qualification:

Examination passed (May 1999); registered to “Albo ORG Piemonte” (1999-2001) and “Elenco Speciale” (since 2002)

NATIONAL SCIENTIFIC QUALIFICATION 2012

Italian national scientific qualification **ASN 2012 and ASN 2016 as full professor** (valid until 16-11-2028)

SCIENTIFIC INTEREST

Topics: (i) tectonic evolution and exhumation processes in orogenic belts; relationships between tectonics and erosion in active orogens and detrital fluxes in adjoining sedimentary basins; (ii) sediment provenance, transport, storage, burial and reworking; (iii) methodological approaches to detrital geo/thermochronological analyses

Tools: Field geology (sedimentology, stratigraphy, structural geology); geologic interpretation of seismic data sets; detrital geochronology and thermochronology

Field sites: Orogenic belts of the Western Mediterranean, North Africa, East Asia and Pacific

Laboratory: Fission-track analysis

FIELD WORK

Western Alps (1995-2010); Scotland (1995); High-Atlas and Anti-Atlas (2004-2006); Southalpine retroforeland basin (2008-2010); Corsica (since 2006); Northern Apennines (since 2010); Tertiary Piedmont basin (since 2011); Dabie Shan (2016, 2018); Tian Shan (2019)

VISITING RESEARCHSHIP

IGG-CAS Beijing, PRC (November 2016; October 2018; October 2019); Syracuse University, NY (June 2014; December 2015); CNRS - Institut de Physique du Globe, Paris (April 2003); GFZ Potsdam (November 2015)

PUBLICATIONS

- 68 international publications (chiefly published as first/corresponding author on high impact factor journals)
 - 7 chapters (peer-reviewed) in scientific books
 - 11 geological maps or explanatory notes published by Geological Surveys of Italy, France, and Morocco;
 - 136 contributions in scientific meetings;
 - 23 invited presentations or seminars (Italy, France, Germany, China, USA);
- H INDEX: Google Scholar 33 (28 since 2018), Scopus 29

Selected publications in international peer-reviewed scientific journals

[*denotes corresponding author]

1. Sun W.*, Ao S.*, Tang Q., **Malusà M.G.***, Zhao L., Xiao W. (2022) Forced Cenozoic continental subduction of Tarim craton-like lithosphere below the Tianshan revealed by ambient noise tomography. *Geology*, 50(12), 1393-1397, doi: 10.1130/G50510.1
2. Paul A.*, **Malusà M.G.***, Solarino S., Salimbeni S., Eva E., Nouibat A., Pondrelli S., Aubert C., Dumont T., Guillot S., Schwartz S., Zhao L.* (2022) Along-strike variations in the fossil subduction zone of the Western Alps revealed by the CIFALPS seismic experiments and their implications for exhumation of (ultra-) high-pressure rocks. *Earth Planet. Sci. Lett.*, 598, 117843, doi: 10.1016/j.epsl.2022.117843.
3. **Malusà M.G.***, Anfinson O.A., Stockli D.F. (2022. (Mis) Identification of magmatic and exhumation ages by detrital zircon U-Pb and He double dating: A case study from the Bergell-Gonfolite system (European Alps). *Chem. Geol.*, 606, 120970, doi: 10.1016/j.chemgeo.2022.120970
4. Nouibat A. *, Stehly L., Paul A., Schwartz S., Rolland Y., Dumont T., Crawford C.W., Brossier R., **Cifalps Team** and AlpArray Working Group (2022). Ambient-noise tomography of the Ligurian-Provence Basin using the AlpArray onshore-offshore network: Insights for the oceanic domain structure. *J. Geophys. Res. Solid Earth*, 127(8), e2022JB024228, doi: 10.1029/2022JB024228
5. Nouibat A. *, Stehly L., Paul A., Schwartz S., Bodin T., Dumont T., Rolland Y., Brossier R., **Cifalps Team** and AlpArray Working Group. (2022). Lithospheric transdimensional ambient-noise tomography of W-Europe: implications for crustal-scale geometry of the W-Alps. *Geophys. J. Int.*, 229(2), 862-879, doi: 10.1093/gji/ggab520

6. Guo C., Zhang Z.*, **Malusà M.G.**, Chew D., Xiang D., Wu L., Wang N., Xiao W. (2022) Late Cenozoic topographic growth of the South Tianshan Mountain Range: insights from detrital apatite fission-track ages, northern Tarim Basin margin, NW China. *J. Asian Earth Sci.*, 234, 105277, doi: 10.1016/j.jseas.2022.105277
7. Lu H.*, **Malusà M.G.**, Zhang Z., Guo L., Shi X., Ye J., Sang S., Xiong S., Pan J., Li H. (2022) Syntectonic sediment recycling controls eolian deposition in eastern Asia since~ 8 Ma. *Geophys. Res. Lett.*, 49, e2021GL096789. doi: 10.1029/2021GL096789
8. **Malusà M.G.***, Brandmayr E., Panza G.F., Romanelli F., Ferrando S., Frezzotti M.L.* (2022) An explosive component in a December 2020 Milan earthquake suggests outgassing of deeply recycled carbon. *Commun. Earth Environ.* 3(1), 1-6, doi: 0.1038/s43247-021-00336-y
9. Liu D., Zhao L.*, Paul A., Yuan H., Solarino S., Aubert C., Pondrelli S., Salimbeni S., Eva E. **Malusà M.G.**, Guillot S. (2022) Receiver function mapping of the mantle transition zone beneath the Western Alps: New constraints on slab subduction and mantle upwelling. *Earth Planet. Sci. Lett.* 577, 117267, doi: 10.1016/j.epsl.2021.117267
10. Wang N., Zhang Z.*, **Malusà M.G.**, Wu L., Chew D., Zhang J., Xiang W., Xiao W. (2021) Pulsed Mesozoic exhumation in Northeast Asia: New constraints from zircon U-Pb and apatite U-Pb, fission track and (U-Th)/He analyses in the Zhangguangcai Range, NE China. *Tectonophysics*, 818, 229075, doi: 10.1016/j.tecto.2021.229075
11. Salimbeni S.*, Piana Agostinetti N., Pondrelli S., & CIFALPS Working Group (2021) Insights into the origin and deformation style of the continental Moho: A case-study from the Western Alps (Italy). *J. Geophys. Res. Solid Earth* 126(6), e2020JB021319, doi: 10.1029/2020JB021319.
12. **Malusà M.G.***, Guillot S., Zhao L., Paul A., Solarino S., Dumont T., Schwartz S., Aubert C., Baccheschi P., Eva E., Lu Y., Lyu C., Pondrelli S., Salimbeni S., Sun W., Yuan H. (2021) The Deep Structure of the Alps based on the CIFALPS Seismic Experiment: A Synthesis. *Geochemistry, Geophysics, Geosystems*, 22, 1-42, e2020GC009466, doi: 10.1029/2020GC009466
13. **Malusà M.G.***, Fitzgerald P.G. (2020) The geologic interpretation of the detrital thermochronology record within a stratigraphic framework, with examples from the European Alps, Taiwan and the Himalayas. *Earth-Sci Rev.* 201, 103074, doi: 10.1016/j.earscirev.2019.103074
14. Eva E., **Malusà M.G.***, Solarino S. (2020) Seismotectonics at the Transition Between Opposite-Dipping Slabs (Western Alpine Region). *Tectonics* 39(9), e2020TC006086, doi: 10.1029/2020TC006086
15. Resentini A., **Malusà M.G.***, Garzanti E. (2020) Ongoing exhumation of the Taiwan orogenic wedge revealed by detrital apatite thermochronology: The impact of effective mineral fertility and zero-track grains. *Earth Planet. Sci. Lett.* 544, 116374, doi: 10.1016/j.epsl.2020.116374
16. Resentini A., **Malusà M.G.***, Garzanti E. (2020) Reply to Comment on Resentini et al., 2020: “Ongoing exhumation of the Taiwan orogenic wedge revealed by detrital apatite thermochronology: The impact of effective mineral fertility and zero-track grains”. *Earth Planet. Sci. Lett.* 550, 116557, doi: 10.1016/j.epsl.2020.116557
17. Resentini A.*, Andò S., Garzanti E., **Malusà M.G.**, Pastore G., Vermeesch P., Chanvry E., Dall'Asta M. (2020) Zircon as a provenance tracer: Coupling Raman spectroscopy and UPb geochronology in source-to-sink studies. *Chem. Geol.* 555, 119828, doi: 10.1016/j.chemgeo.2020.119828
18. Zhao L.*, **Malusà M.G.***, Yuan H.*, Paul A., Guillot S., Lu Y., Stehly L., Solarino S., Eva E., Lu G., Bodin T., CIFALPS Group, AlpArray Working Group (2020) Evidence for a serpentinized plate interface favouring continental subduction. *Nat. Commun.* 11(1), 1-8, doi: 10.1038/s41467-020-15904-7
19. Zhao L.*, **Malusà M.G.***, Yuan H.*, Paul A., Guillot S., Lu Y., Stehly L., Solarino S., Eva E., Lu G., Bodin T., CIFALPS Group, AlpArray Working Group (2020) Author Correction: Evidence for a serpentinized plate interface favouring continental subduction. *Nat. Commun.* 11(1), 1-8, doi: 10.1038/s41467-020-17767-4
20. Ellero A., **Malusà M.G.**, Ottria G.*, Ouanaimi H., Froitzheim N. (2020) Transpressional structuring of the High Atlas belt, Morocco. *J. Struct. Geol.*, 104021, doi: 10.1016/j.jsg.2020.104021
21. Asti R.*, Faccenna C., Rossetti F., **Malusà M.G.**, Gliozzi E., Faranda C., Lirer F., Cosentino D. (2019) The Gediz supradetachment system (SW Turkey): magmatism, tectonics, and sedimentation during crustal extension. *Tectonics* 38(4), 1414-1440, doi: 10.1029/2018TC005181

22. Sun W.*, Zhao L., **Malusà M.G.***, Guillot S., Fu, L.Y. (2019) 3-D Pn tomography reveals continental subduction at the boundaries of the Adriatic microplate in the absence of a precursor oceanic slab. *Earth Planet. Sci. Lett.* 510, 131-141, doi: 10.1016/j.epsl.2019.01.012
23. Ji W.Q.*, **Malusà M.G.***, Tiepolo M., Langone A., Zhao L., Wu F.Y. (2019) Synchronous Periadriatic magmatism in the Western and Central Alps in the absence of slab breakoff. *Terra Nova* 31(2), 120-128, doi: 10.1111/ter.12377
24. Liao J.*, **Malusà M.G.***, Zhao L., Baldwin S.L., Fitzgerald P.G., Gerya T. (2018) Divergent plate motion drives rapid exhumation of (ultra)high pressure rocks. *Earth Planet. Sci. Lett.* 491, 67-80, doi: 10.1016/j.epsl.2018.03.024
25. **Malusà M.G.***, Frezzotti M.L.*, Ferrando S., Brandmayr E., Romanelli F., Panza G.F. (2018) Active carbon sequestration in the Alpine mantle wedge and implications for long-term climate trends. *Scientific Reports* 8:4740, doi:10.1038/s41598-018-22877-7.
26. Salimbeni S.*, **Malusà M.G.***, Zhao L., Guillot S., Pondrelli S., Margheriti L., Paul A., Solarino S., Aubert C., Dumont T., Schwartz S., Wang Q., Xu X., Zheng T., Zhu R. (2018) Active and fossil mantle flows in the western Alpine region unravelled by seismic anisotropy analysis and high-resolution P wave tomography. *Tectonophysics* 731-732, 35-47, doi: 10.1016/j.tecto.2018.03.002
27. Liao J.*, Gerya T., **Malusà M.G.** (2018) 3D modeling of crustal shortening influenced by along-strike lithological changes: Implications for continental collision in the Western and Central Alps. *Tectonophysics* 746, 425–438, doi: 10.1016/j.tecto.2018.01.031
28. Solarino S., **Malusà M.G.***, Eva E., Guillot S., Paul A., Schwartz S., Zhao L., Aubert C., Dumont T., Pondrelli S., Salimbeni S., Wang Q., Xu X., Zheng T., Zhu R. (2018) Mantle wedge exhumation beneath the Dora-Maira (U)HP dome unravelled by local earthquake tomography (Western Alps). *Lithos* 296–299, 623–636, doi: 10.1016/j.lithos.2017.11.035
29. Garzanti E., Radeff G.*, **Malusà M.G.** (2018) Slab breakoff: A critical appraisal of a geological theory as applied in space and time. *Earth-Sci Rev.* 177, 303-319, doi: 10.1016/j.earscirev.2017.11.012
30. Asti R.*, **Malusà M.G.**, Faccenna C. (2018) Supradetachment basin evolution unravelled by detrital apatite fission track analysis: the Gediz Graben (Menderes Massif, Western Turkey). *Basin Res.* 30, 502-521, doi: 10.1111/bre.12262
31. Bergomi M.A., Dal Piaz G.V., **Malusà M.G.***, Monopoli B., Tunesi A. (2017) The Grand St Bernard-Briançonnais nappe system and the Paleozoic inheritance of the Western Alps unraveled by zircon U-Pb dating. *Tectonics* 36, 2950–2972, doi: 10.1002/2017TC004621
32. **Malusà M.G.***, Wang J.*, Garzanti E., Liu Z.C., Villa I.M., Wittmann H. (2017) Trace-element and Nd-isotope systematics in detrital apatite of the Po river catchment: Implications for provenance discrimination and the lag-time approach to detrital thermochronology. *Lithos* 290–291, 48–59, doi: 10.1016/j.lithos.2017.08.006
33. Zhao L.*, Xu X., **Malusà M.G.** (2017) Seismic probing of continental subduction zones. *J. Asian Earth Sci.* 145, 37-45, doi: 10.1016/j.jseaes.2017.05.026
34. Lyu C., Pedersen H.A., Paul A., Zhao L., Solarino S., and CIFALPS Working Group (2017) Shear wave velocities in the upper mantle of the Western Alps: new constraints using array analysis of seismic surface waves. *Geophys. J. Int.* 210, 321–331, doi: 10.1093/gji/ggx166
35. **Malusà M.G.***, Zhao L., Eva E., Solarino S., Paul A., Guillot S., Schwartz S., Dumont T., Aubert C., Salimbeni S., Pondrelli S., Wang Q., Zhu R. (2017) Earthquakes in the Western Alpine mantle wedge. *Gondwana Res.* 44, 89–95, doi: 10.1016/j.gr.2016.11.012
36. Zhao L.*, Paul A., **Malusà M.G.***, Xu X., Zheng T., Solarino S., Guillot S., Schwartz S., Dumont T., Salimbeni S., Aubert C., Pondrelli S., Wang Q., Zhu R. (2016) Continuity of the Alpine slab unraveled by high-resolution P wave tomography. *J. Geophys. Res. Solid Earth* 121, 8720–8737, doi:10.1002/2016JB013310
37. Anfinson O.A.*, **Malusà M.G.***, Ottria G., Dafov L.N., Stockli D.F. (2016) Tracking coarse-grained gravity flows by LASS-ICP-MS depth-profiling of detrital zircon (Aveto Formation, Adriatic foredeep, Italy). *Marine Petrol. Geol.* 77, 1163-1176, doi: 10.1016/j.marpetgeo.2016.07.014
38. Wittmann H.*, **Malusà M.G.**, Resentini A., Garzanti E., Niedermann S. (2016) The cosmogenic record of mountain erosion transmitted across a foreland basin: source-to-sink analysis of *in situ* ¹⁰Be, ²⁶Al and ²¹Ne in sediment of the Po river catchment. *Earth Planet. Sci. Lett.* 452, 258–271, doi: /10.1016/j.epsl.2016.07.017

39. **Malusà M.G.***, Anfinson O.A., Dafov L.N., Stockli D.F. (2016) Tracking Adria indentation beneath the Alps by detrital zircon U-Pb geochronology: Implications for the Oligocene–Miocene dynamics of the Adriatic microplate. *Geology* 44, 155–158, doi: 10.1130/G37407.1
40. **Malusà M.G.**, Resentini A.*, Garzanti E. (2016) Hydraulic sorting and mineral fertility bias in detrital geochronology. *Gondwana Res.* 31, 1–19, doi:10.1016/j.gr.2015.09.002
41. **Malusà M.G.***, Danišík M., Kuhlemann J. (2016) Tracking the Adriatic-slab travel beneath the Tethyan margin of Corsica-Sardinia by low-temperature thermochronometry. *Gondwana Res.* 31, 135–149, doi:10.1016/j.gr.2014.12.011
42. Zanchetta S.*, **Malusà M.G.**, Zanchi A. (2015) Precollisional development and Cenozoic evolution of the Southalpine retrobelt (European Alps). *Lithosphere* 7, 662–681, doi: 10.1130/L466.1
43. Eva E., **Malusà M.G.***, Solarino S. (2015) A seismotectonic picture of the inner southern Western Alps based on the analysis of anomalously deep earthquakes. *Tectonophysics* 661, 190–199, doi: 10.1016/j.tecto.2015.08.040
44. Zhao L.*, Paul A., Guillot S., Solarino S., **Malusà M.G.**, Zheng T., Aubert C., Salimbeni S., Dumont T., Schwartz S., Zhu R., Wang Q. (2015) First seismic evidence for continental subduction beneath the Western Alps. *Geology* 43, 815–818, doi: 10.1130/G36833.1
45. **Malusà M.G.***, Faccenna C., Baldwin S.L., Fitzgerald P.G., Rossetti F., Balestrieri M.L., Danišík M., Ellero A., Ottria G., Piromallo C. (2015) Contrasting styles of (U)HP rock exhumation along the Cenozoic Adria-Europe plate boundary (Western Alps, Calabria, Corsica). *Geochem. Geophys. Geosyst.* 16(6), 1786–1824, doi: 10.1002/2015GC005767.
46. **Malusà M.G.***, Carter A., Limoncelli M., Villa I.M., Garzanti E. (2013) Bias in detrital zircon geochronology and thermochronometry. *Chem. Geol.* 359, 90–107, doi: 10.1016/j.chemgeo.2013.09.016
47. Resentini A.*, **Malusà M.G.**, Garzanti E. (2013) MinSORTING: An Excel® worksheet for modelling mineral grain-size distribution in sediments, with application to detrital geochronology and provenance studies. *Computers Geosci.* 59, 90–97, doi: 10.1016/j.cageo.2013.05.015
48. Agliardi F.*, Crosta G.B., Frattini P., **Malusà M.G.** (2013) Giant non-catastrophic landslides and the long-term exhumation of the European Alps. *Earth Planet. Sci. Lett.* 365, 263–274, doi: 10.1016/j.epsl.2013.01.030
49. **Malusà M.G.***, Balestrieri M.L. (2012) Burial and exhumation across the Alps-Apennines junction zone constrained by fission-track analysis on modern river sands. *Terra Nova* 24, 221–226, doi:10.1111/j.1365-3121.2011.01057.x
50. Resentini A., **Malusà M.G.*** (2012) Sediment budgets by detrital apatite fission track dating (Rivers Dora Baltea and Arc, Western Alps). In: *Rasbury E.T. et al. (eds.), "Mineralogical and Geochemical Approaches to Provenance"*, *Geol. Soc. Am. Spec. Paper* 487, 125–140, doi:10.1130/2012.2487(08)
51. Garzanti E., Resentini A.*, Vezzoli G., Andò S., **Malusà M.G.**, Padoan M. (2012) Forward compositional modelling of Alpine orogenic sediment. *Sediment. Geol.* 280, 149–164, doi.org/10.1016/j.sedgeo.2012.03.012
52. **Malusà M.G.***, Garzanti E. (2012) Actualistic snapshot of the early Oligocene Alps: the Alps-Apennines knot disentangled. *Terra Nova* 24, 1–6, doi: 10.1111/j.1365-3121.2011.01030.x
53. **Malusà M.G.***, Faccenna C., Garzanti E., Polino R. (2011) Divergence in subduction zones and exhumation of high pressure rocks (Eocene Western Alps). *Earth Planet. Sci. Lett.* 310, 21–32, doi:10.1016/j.epsl.2011.08.002
54. **Malusà M.G.***, Villa I.M., Vezzoli G., Garzanti E. (2011) Detrital geochronology of unroofing magmatic complexes and the slow erosion of Oligocene volcanoes in the Alps. *Earth Planet. Sci. Lett.* 301, 324–336, doi: 10.1016/j.epsl.2010.11.019
55. D’Adda P.*, Zanchi A., Bergomi M., Berra F., **Malusà M.G.**, Tunesi A., Zanchetta S. (2011) Polyphase thrusting and dyke emplacement in the central Southern Alps (Northern Italy). *Int. J. Earth Sci.* 100, 1095–1113, doi: 10.1007/s00531-010-0586-2
56. Garzanti E., Resentini A.*, Vezzoli G., Andò S., **Malusà M.G.**, Padoan M., Paparella P. (2010) Detrital fingerprints of fossil continental-subduction zones (axial belt provenance, European Alps). *J. Geol.* 118, 341–362, doi: 10.1086/652720

57. Cerrina Feroni A., Ellero A., **Malusà M.G.**, Musumeci G., Ottria G.*, Polino R., Leoni L. (2010) Transpressional tectonics and nappe stacking along the Southern Variscan Front of Morocco. *Int. J. Earth Sci.* 99, 1111-1122, doi: 10.1007/s00531-009-0449-x
58. Molli G.*, Crispini L., **Malusà M.G.**, Mosca P., Piana F., Federico L. (2010) Geology of the Western Alps - Northern Apennine junction area: a regional review - In: *Beltrando M. et al. (eds.), "The Geology of Italy: tectonics and life along plate margins". Journal of the Virtual Explorer, Electronic Edition, ISSN 1441-8142*, vol. 36, paper 10, doi: 10.3809/jvirtex.2010.00215
59. **Malusà M.G.***, Polino R., Zattin M. (2009) Strain partitioning in the axial NW Alps since the Oligocene. *Tectonics* 28, TC3005, 1–26, doi:10.1029/2008TC002370
60. **Malusà M.G.***, Zattin M., Andò S., Garzanti E., Vezzoli G. (2009) Focused erosion in the Alps constrained by fission-track ages on detrital apatites - In: *Lisker F., et al. (eds.), "Thermochronological methods: from palaeotemperature constraints to landscape evolution models"*, *Geol. Soc. London Spec. Publ.* 324, 141-152, doi:10.1144/SP324.11.
61. Garzanti E., **Malusà M.G.*** (2008) The Oligocene Alps: Domal unroofing and drainage development during early orogenic growth. *Earth Planet. Sci. Lett.* 268, 487-500, doi:10.1016/j.epsl.2008.01.039.
62. **Malusà M.G.***, Polino R., Cerrina Feroni A., Ellero A., Ottria G., Baidder L., Musumeci G. (2007) Post-Variscan tectonics in eastern Anti-Atlas (Morocco). *Terra Nova* 19, 481-489, doi: 10.1111/j.1365-3121.2007.00775.x.
63. **Malusà M.G.***, Philippot P., Zattin M., Martin S. (2006) Late stages of exhumation constrained by structural, fluid inclusion and fission track analyses (Sesia-Lanzo unit, Western European Alps). *Earth Planet. Sci. Lett.* 243, 565-580, doi:10.1016/j.epsl.2005.12.030
64. **Malusà M.G.***, Vezzoli G. (2006) Interplay between erosion and tectonics in the Western Alps. *Terra Nova* 18, 104-108, doi:10.1111/j.1365-3121.2006.00669.x.
65. **Malusà M.G.***, Polino R., Zattin M., Bigazzi G., Martin S., Piana F. (2005) Miocene to Present differential exhumation in the Western Alps: Insights from fission track thermochronology. *Tectonics* 24, TC3004, 1-23, doi:10.1029/2004TC001782
66. **Malusà M.G.***, Polino R., Martin S. (2005) The Gran San Bernardo nappe in the Aosta Valley (Western Alps): a composite stack of distinct continental crust units. *Bull. Soc. Géol. France* 176, 417-431
67. **Malusà M.G.***, Zattin M., Andò S., Garzanti E., Vezzoli G. (2005) Detrital apatite fission-track ages from the Po sands: Implications for the erosional pattern of the orogenic source areas. *GeoActa* 4, 57-65
68. **Malusà M.G.***, Mosca P., Borghi A., Dela Pierre F., Polino R. (2002) Approccio multidisciplinare per la ricostruzione dell'assetto tettono-stratigrafico e dell'evoluzione metamorfico-strutturale di un settore di catena orogenica: l'esempio dell'Alta Valle di Susa (Alpi occidentali). *Mem. Soc. Geol. It.* 57, 249-257.

Geological maps and explanatory notes

Coauthor of the following official geological maps and explanatory notes, in the Alps and Atlas orogenic belts, published by the National Geological Surveys of Italy, France, and Morocco:

Carta Geologica d'Italia alla scala 1:50 000:

- Polino R. (coord.) et al., 2002. *Foglio 132-152-153 "Bardonecchia"*. Regione Piemonte – SGI
- Polino R. (coord.) et al., 2002. *Note Ill. Foglio 132-152-153 "Bardonecchia"*. Reg. Piemonte – SGI
- Polino R. (coord.) et al., 2015. *Foglio 90 "Aosta"*. Regione A. Valle d'Aosta – ISPRA
- Polino R. (coord.) et al., 2015. *Note Ill. Foglio 90 "Aosta"*. Regione A. Valle d'Aosta – ISPRA
- Polino R. & Fioraso G. (coord.) et al., 2022. *Foglio 171 "Cesana Torinese"*. ARPA Piemonte – ISPRA

Carte géologique de la France à 1/50 000 :

- Barfety J. et al., 2006. *Feuille de Névache - Bardonecchia - Modane (799)*. BRGM Serv. Géol. Nat.

Carte Géologique du Maroc à 1/50.000 :

- El Boukhari A., Musumeci G. (coord.), 2007. *Feuille Imi n'Ouzrou*. Notes Mém. Serv. géol. Maroc, 517
- Malusà M.G., Schiavo A. (coord.), 2007. *Feuille Taghazout*. Notes Mém. Serv. géol. Maroc, 519
- Dal Piaz G. et al., 2007. *Feuille Taghazout, Notice Expl.* Notes Mém. Serv. géol. Maroc, 519bis
- El Boukhari A., Ottria G. (coord.), 2007. *Feuille Taroucht*. Notes Mém. Serv. géol. Maroc, 520
- El Boukhari A. et al., 2007. *Feuille Taroucht, Notice Expl.* Notes Mém. Serv. géol. Maroc, 520bis

Chapter in books (peer-reviewed)

- **Malusà M.G.***, Garzanti E. (2019) The Sedimentology of Detrital Thermochronology. In: Malusà MG, Fitzgerald PG (eds) *Fission-Track Thermochronology and Its Application to Geology*. Springer Textbooks in Earth Sciences, Geography and Environment, Chapter 7, p. 123-143, doi: 10.1007/978-3-319-89421-8_7
- **Malusà M.G.***, Fitzgerald P.G. (2019) From Cooling to Exhumation: Setting the Reference Frame for the Interpretation of Thermochronologic Data. In: Malusà MG, Fitzgerald PG (eds) *Fission-Track Thermochronology and Its Application to Geology*. Springer Textbooks in Earth Sciences, Geography and Environment, Chapter 8, p. 147-164, doi: 10.1007/978-3-319-89421-8_8
- Fitzgerald P.G. *, **Malusà M.G.** (2019) Concept of the Exhumed Partial Annealing (Retention) Zone and Age-Elevation Profiles in Thermochronology. In: Malusà MG, Fitzgerald PG (eds) *Fission-Track Thermochronology and Its Application to Geology*. Springer Textbooks in Earth Sciences, Geography and Environment, Chapter 9, p. 165-189, doi: 10.1007/978-3-319-89421-8_9
- **Malusà M.G.***, Fitzgerald P.G. (2019) Application of Thermochronology to Geologic Problems: Bedrock and Detrital Approaches. In: Malusà MG, Fitzgerald PG (eds) *Fission-Track Thermochronology and Its Application to Geology*. Springer Textbooks in Earth Sciences, Geography and Environment, Chapter 10, p. 191-209, doi: 10.1007/978-3-319-89421-8_10
- Baldwin S.L.*, Fitzgerald P.G., **Malusà M.G.** (2019) Crustal exhumation of plutonic and metamorphic rocks: constraints from fission-track thermochronology. In: Malusà MG, Fitzgerald PG (eds) *Fission-Track Thermochronology and Its Application to Geology*. Springer Textbooks in Earth Sciences, Geography and Environment, Chapter 13, p. 235-257, doi: 10.1007/978-3-319-89421-8_13
- **Malusà M.G.** (2019) A Guide for Interpreting Complex Detrital Age Patterns in Stratigraphic Sequences. In: Malusà MG, Fitzgerald PG (eds) *Fission-Track Thermochronology and Its Application to Geology*. Springer Textbooks in Earth Sciences, Geography and Environment, Chapter 16, p. 279-293, doi: 10.1007/978-3-319-89421-8_16
- Fitzgerald P.G. *, **Malusà M.G.**, Muñoz J.A. (2019) Detrital Thermochronology Using Conglomerates and Cobbles. In: Malusà MG, Fitzgerald PG (eds) *Fission-Track Thermochronology and Its Application to Geology*. Springer Textbooks in Earth Sciences, Geography and Environment, Chapter 17, p. 295-314, doi: 10.1007/978-3-319-89421-8_17

INVITED TALKS AND LECTURES

Invited presentations at Conferences or Symposia

- AGU Fall Meeting 2021, Session T32A. New Orleans, 15th Dec 2021
- International Workshop on Tethys Dynamics, IGG CAS, Beijing, 8th October 2019
- International Workshop on Tethys Dynamics, IGG CAS, Beijing, 8th October 2018
- EGU General Assembly 2018, Session SSP3.2/GM11.8. Vienna, 9th April 2018
- Convegno nazionale “Geologia urbana di Aosta”, SIGeA, 28th Oct 2016, Aosta
- EGU General Assembly 2014, Session GM3.1/GD1.4/TS4.5. Vienna, 2nd May 2014
- 13th International Conference on Thermochronology, Guilin, China 24th -28th August 2012

Invited talks at Colloquia or Seminars

- Chinese University of Geosciences, Beijing, 7th Nov 2022 (online)
- Istituto Nazionale di Geofisica e Vulcanologia, 16th Jun 2021 (online)
- Syracuse University, 12th Nov 2020 (online)
- Institute of Geology and Geophysics, Chinese Academy of Sciences, 17th Oct 2019, Beijing
- Università di Torino, 17th May 2018, Torino
- Hefei University Tech, 7th Nov 2016, Hefei, China
- Institute of Geology and Geophysics, Chinese Academy of Sciences, 3rd Nov 2016, Beijing
- 4th CIFALPS Workshop, INGV, 13th Oct 2016, Genova
- GFZ Potsdam, 17th Nov 2015, Potsdam
- 3rd CIFALPS Workshop, ISTERre Grenoble, 10th Sept 2015, Grenoble
- 2nd CIFALPS Project Meeting, INGV, 20-21 Jan 2015, Bologna
- Syracuse University, 27th June 2014, Syracuse, NY
- Institute of Geology and Geophysics, Chinese Academy of Sciences, 28th May 2014, Beijing
- University of Roma Tre, 12th Nov 2009, Roma

- Séminaires LGCA, 6th Nov 2007, Grenoble
- International Workshop “Erosion in the Alps”, 23rd Feb 2006, Milano

ORGANIZATION OF SCIENTIFIC MEETINGS

- Scientific Committee:** Member of the Scientific Committee of the 14th Alpine Workshop (Emile Argand Conference – EGU series), Sion 4th-6th Sept. 2019
- Member of the Scientific Committee of the 12th Alpine Workshop (Emile Argand Conference – EGU series), Montgenèvre - Briançon 13th-19th Sept. 2015
- Member of the Scientific Committee of the 10th Workshop on Alpine Geological Studies "CorseAlp 2011", St Florent, Corsica, 10th-16th April 2011
- Organizing Committee:** 81st Geological Society of Italy Summer Meeting, Torino, 10th-12th Sept. 2002
- 5th Working Group on Sediment Generation Meeting, Milan 28th-30th Jun 2022
- 18th Int. Conference on Thermochronology, Riva del Garda TN, 3rd-9th Sept 2023
- Conference Field Trips:** Post-conference field trip leader, 4th CIFALPS Workshop, 14th-15th Oct 2016
- Pre-conference field trip leader, 14th International Conference on Thermochronology, Chamonix, 5th-7th Sept 2014
- Pre-conference field trip leader, Seminario Cartografia Geologica 7th-11th Nov 2005, Torino, APAT - ARPA Piemonte
- Pre-conference field trip leader, 81st Summer Meeting of the Geological Society of Italy, 6th-9th Sept 2002

Conference sessions convened

- EGU General Assembly 2021: A. Paul, N. Bellahsen, G. Hetényi, M.G. Malusà, I. Molinari (co-convenors), “The Alps and neighbouring mountain belts (Pyrenees, Apennines, Dinarides, Carpathians): a multidisciplinary vision (AlpArray)” (TS7.8), to be held online, 19th – 30th April 2021
- EGU General Assembly 2020: A. Paul, M. Handy, G. Hetényi, M.G. Malusà, I. Molinari (co-convenors), “The Alps and neighbouring mountain belts (Apennines, Dinarides, Carpathians): a multidisciplinary vision (AlpArray)” (TS7.6/GD7/SM4), online, 7th May 2020
- EGU General Assembly 2019: A. Paul, M. Handy, G. Hetényi, M.G. Malusà, I. Molinari (co-convenors), “The Alps and neighbouring mountain belts (Apennines, Dinarides, Carpathians): a multidisciplinary vision (AlpArray)” (TS7.9/GD6.7/SM1.22), Vienna, 11th April 2019
- EGU General Assembly 2018: A. Paul, G. Hetényi, I. Molinari, M.G. Malusà, A. Brogi, S. Corrado (co-convenors), “The Alps and neighbouring mountain belts (Apennines, Dinarides, Carpathians): a multidisciplinary vision (AlpArray)” (TS7.12/GD8.6/SM 4.13), Vienna, 11th April 2018
- EGU General Assembly 2017: A. Paul, G. Hetényi, M.G. Malusà, I. Molinari (co-convenors), “The Alps and neighbouring mountain belts: a multidisciplinary vision (AlpArray)” (TS7.7/SM6.13), Vienna, 25th April 2017
- SGI National Conference 2016: R. Carosi, M.G. Malusà, M. Mattei, and A. Zanchi (co-convenors), “Geodynamics and Paleogeography of Tethyan belts: from convergence to exhumation” (S6), Napoli, 9th Sept 2016
- SGI-SIMP National Conference 2014: G. Capponi, M.G. Malusà, and G. Prosser (co-convenors), “Geodynamics of the Alpine orogenic system: from surface processes to deep dynamics” (S31), Milano, 12th Sept 2014
- AGU Fall Meeting 2012: S. Baldwin, M.G. Malusà, and W. Mann (co-convenors), “Tectonic Mechanisms for Extension Along Convergent Margins” (T42C/T43E), San Francisco, CA, 6th Dec 2013
- SGI National Conference 2012: L. Aldega, M.L. Balestrieri, S. Corrado, N. Malaspina, M.G. Malusà, F. Perri, and M. Zattin (co-convenors), “Exhumation and maximum burial in circum-Mediterranean orogens: from mantle depth to the surface” (TS1.5), Arcavacata di Rende (CS), 18th-20th Sept 2012
- 13th International Conference on Thermochronology, Guilin, China 24-28 August, 2012 (Chairman - session “Thermochronology of orogenic belts”)

- 10th Workshop on Alpine Geological Studies “CorseAlp2011”, 10th-16th April 2011 (Chairman - session “Alpine orogens and Mediterranean tectonics II: coupling between tectonics and surface processes”)
- EGU General Assembly 2010: R. Bousquet, M.G. Malusà, C. Rosenberg, and C. Sue (co-convenors), “Geodynamics of the Alps - from deep-seated to surface processes” (TS4.5/GM5.6), Vienna, 6th May 2010

ORGANIZATION OF ADVANCED INTERNATIONAL SCHOOLS

- Short course “Detrital geochronology and thermochronology”, organizers: Malusà MG & Villa IM (online, Jan-Feb 2021)
- Summer school “DEPTs - Field-based Summer School on Subduction Forearc Dynamics”, organizers: Malusà MG, Ferrando S, Guillot S, Groppo C, Paul A (Milan and the Western Alps, 6th-10th Sept 2021)
- Short course “Detrital geochronology and thermochronology”, organizers: Malusà MG & Villa IM (online, Jan-Feb 2022)
- Summer school “DEPTs - Field-based Summer School on Subduction Forearc Dynamics - second edition”, organizers: Malusà MG, Ferrando S, Guillot S, Groppo C, Paul A (Milan and the Western Alps, 1st-5th July 2022)
- Short course “Detrital geochronology and thermochronology”, organizers: Malusà MG & Villa IM (online, Jan-Feb 2023)

OTHER SYNERGISTIC ACTIVITIES

- Scientific director in international mapping projects (Carte Géologique du Maroc au 1/50.000, 2004-2007)
- Member of the AlpArray initiative Science Council (since 2018)

EDITORIAL APPOINTMENTS

- Co-editor of the monograph: Malusà MG, Fitzgerald PG (eds) *Fission-Track Thermochronology and Its Application to Geology*. Springer Textbooks in Earth Sciences, Geography and Environment, 393 p., doi: 10.1007/978-3-319-89421-8 (since 2022 also translated in Chinese)
- Guest Associate Editor of Tectonics and G-Cubed (*special section “Tethyan Dynamics: from Rifting to Collision”*) (2019-2020)

TEACHING, MENTORING AND TRAINING

- Courses taught at University of Milano-Bicocca (223 credits and **>1800 hours** teaching since 2005):
 - since 2005 - Field geology and mapping (including interpretation of geological maps) - B.Sc. level
 - since 2006 - Field training (application of field geology techniques in orogenic areas) - B.Sc. level
 - since 2008-2014 Geology of sedimentary basins, seismic stratigraphy - M.Sc. level
 - since 2008-2014 Advanced stratigraphy and regional geology - M.Sc. level
- Advisor (or co-advisor) for 4 PhD theses, 11 MSc theses, and 51 BSc theses (2 in progress) (*5 advised students received the Forcella Award for the best field-geology thesis at UniMi and UniMiB*)
- 17 students from Italy and China trained in the Laboratory for fission-track analysis since 2008
- External examiner for PhD theses (UJF Grenoble, University of Bologna, University of Roma Tre)