
PUBLICATIONS

A) PUBLICATIONS ON ISI JOURNALS AND PEER-REVIEWED

(* denotes (co)supervised Ph.D. student or postdoctoral scholar student first author)

- 1) Mancktelow, N., Camacho, A., **Pennacchioni, G.**, 2022, Time-lapse record of an earthquake in the dry felsic lower continental crust preserved in a pseudotachylyte-bearing fault. *Journal of Geophysical Research, Solid Earth* 127, e2021JB022878.
• <https://doi.org/10.1029/2021JB022878>
- 2) *Toffol, G., Yang, J., **Pennacchioni, G.**, Faccenda, M., Scambelluri, M., 2022. How to quake a subducting dry slab at intermediate depths: inferences from numerical modelling. *Earth and Planetary Science Letters* 578, 117289. <https://doi.org/10.1016/j.epsl.2021.117289>
- 3) Bestmann, G., **Pennacchioni, G.**, Grasemann, B., Huet, B., Jones, M.W.M., Kewish, C.M., 2022. Influence of deformation and fluids on Ti exchange in natural quartz. *Journal of Geophysical Research: Solid Earth*, 126, e2021JB022548.
<https://doi.org/10.1029/2021JB022548>
- 4) de Montserrat, A., Faccenda, M., **Pennacchioni, G.**, 2021. Extrinsic anisotropy of two-phase Newtonian aggregates: Fabric characterization and parameterization. *Journal of Geophysical Research: Solid Earth* 126, e2021JB022232.
<https://doi.org/10.1029/2021JB022232>
- 5) *Masoch, S., Gomila, R., Fondriest, M., Jensen, E., Mitchell, T., **Pennacchioni, G.**, Cembrano, J., Di Toro, G., 2021. Structural evolution of a crustal-scale seismogenic fault in a magmatic arc: The Bolfin Fault Zone (Atacama Fault System). *Tectonics* 40, e2021TC006818. <https://doi.org/10.1029/2021TC006818>
- 6) Bestmann, M., Pennacchioni, G., Grasemann, B., 2021. Deformation-induced Japan twinning in quartz during incipient mylonitization. *Geology* 49, 1267-1271, <https://doi.org/10.1130/G49077.1>
- 7) *Papa, S., Spagnuolo, E., **Pennacchioni, G.**, Di Toro, G., Cavallo, A., Favero, M., Camacho, A., 2021. Selective clast survival in an experimentally-produced pseudotachylyte. *Journal of Structural Geology* 147, 104328. <https://doi.org/10.1016/j.jsg.2021.104328>
- 8) Menegon, L., Campbell, L., Mancktelow, N., Camacho, A., Wex, S., Papa, S., Toffol, G., **Pennacchioni, G.**, 2021 The earthquake cycle in the dry lower continental crust: insights from two deeply exhumed terranes (Musgrave Ranges, Australia and Lofoten, Norway). *Phil. Trans. R. Soc. A* 20190416. <http://dx.doi.org/10.1098/rsta.2019.0416>
- 9) Pennacchioni, G., Scambelluri, M., Bestmann, M., Notini, L., Nimis, P., Plümper, O., Faccenda, M., Nestola, F., 2020. Record of intermediate-depth subduction seismicity in a dry slab from an exhumed ophiolite. *Earth and Planetary Science Letters* 548, 116490. <https://doi.org/10.1016/j.epsl.2020.116490>
- 10) *Ceccato, A., Goncalves, P., **Pennacchioni, G.**, 2020. Temperature, fluid content and rheology of localized ductile shear zones in sub-solidus cooling plutons. *Journal of metamorphic Geology* 38, 881-903. <https://doi.org/10.1111/jmg.12553>
- 11) Mancktelow, N., **Pennacchioni, G.**, 2020. Intermittent fracturing in the middle continental crust as evidence for transient switching of principal stress axes associated with the subduction zone earthquake cycle. *Geology* 48, 1072–1076, <https://doi.org/10.1130/G47625.1>
- 12) *Papa, S., **Pennacchioni, G.**, Menegon, L., Thielmann, M., 2020. High-stress creep preceding coseismic rupturing in amphibolite-facies ultramylonites. *Earth and Planetary Science Letters* 541, 116260. <https://doi.org/10.1016/j.epsl.2020.116260>

- 13) Campbell, L.R., Menegon, L., Fagereng, Å., **Pennacchioni, G.**, 2020. Earthquake nucleation in the lower crust by local stress amplification. *Nature Communications* 11, 1322. <https://doi.org/10.1038/s41467-020-15150-x>
- 14) Hawemann, F., Mancktelow, N. S., Wex, S., **Pennacchioni, G.**, Camacho, A., 2019. Fracturing and crystal plastic behaviour of garnet under seismic stress in the dry lower continental crust (Musgrave Ranges, Central Australia). *Solid Earth*, 10, 1635–1649. <https://doi.org/10.5194/se-10-1635-2019>
- 15) Guastoni, A., Secco, L., Škoda, R., Nestola, F., Schiazza, M., Novák, M., **Pennacchioni, G.**, 2019. Non-Metamict Aeschynite-(Y), Polycrase-(Y), and Samarskite-(Y) in NYF Pegmatites from Arvogno, Vigezzo Valley (Central Alps, Italy). *Minerals* 9, 313. <https://doi.org/10.3390/min9050313>
- 16) Di Vincenzo, G., **Pennacchioni, G.**, Bestmann, M., 2019. Exploring the Ar isotope record of an early Miocene pseudotachylyte in an early Oligocene intrusion (Rieserferner pluton, eastern Alps). *Lithos* 338–339, 1–17. <https://doi.org/10.1016/j.lithos.2019.04.009>
- 17) Faccenda, M., Ferreira, A.M.G., Tisato, N., Lithgow-Bertelloni, C., Stixrude, L., **Pennacchioni, G.**, 2019. Extrinsic elastic anisotropy in a compositionally heterogeneous Earth's mantle. *Journal of Geophysical Research – Solid Earth* 124. <https://doi.org/10.1029/2018JB016482>
- 18) Wex, S., Mancktelow, N.S., Camacho, A., **Pennacchioni, G.**, 2019. Interplay between seismic fracture and aseismic creep in the Woodroffe Thrust, central Australia - Inferences for the rheology of relatively dry continental mid-crustal levels. *Tectonophysics* 758, 55-72. <https://doi.org/10.1016/j.tecto.2018.10.024>
- 19) Hawemann, F., Mancktelow, N. S., **Pennacchioni, G.**, Wex, S., Camacho, A., 2019. Weak and slow, strong and fast: How shear zones evolve in a dry continental crust (Musgrave Ranges, Central Australia). *Journal of Geophysical Research: Solid Earth* 124, 1671-1687, <https://doi.org/10.1029/2018JB016559>
- 20) *Ceccato, A., Menegon, L., **Pennacchioni, G.**, Morales, L.F.G., 2018. Myrmekite and strain weakening in granitoid mylonites. *Solid Earth* 9, 1399-1419. <https://doi.org/10.5194/se-9-1399-2018>
- 21) *Ceccato, A., **Pennacchioni, G.**, 2018. Structural evolution of the Rieserferner pluton in the framework of the Oligo-Miocene tectonics of the eastern Alps. *Journal of Structural Geology* 116, 64-80. <https://doi.org/10.1016/j.jsg.2018.08.004>
- 22) **Pennacchioni, G.**, Mancktelow, N.S., 2018. Small-scale ductile shear zones: neither extending, nor thickening, nor narrowing. *Earth-Science Reviews* 184, 1-12. <https://doi.org/10.1016/j.earscirev.2018.06.004>
- 23) Wex, S., Mancktelow, N.S., Hawemann, F., Camacho, A., **Pennacchioni, G.**, 2018. Inverted distribution of ductile deformation in the relatively “dry” middle crust across the Woodroffe Thrust, central Australia. *Solid Earth* 9, 629-648. <https://doi.org/10.5194/se-9-629-2018>
- 24) Hawemann, F., Mancktelow, N., Wex, S., Camacho, A., **Pennacchioni, G.**, 2018. Pseudotachylyte as field evidence for lower crustal earthquakes during the intracontinental Petermann Orogeny (Musgrave Block, Central Australia). *Solid Earth* 9, 629–648, 2018. <https://doi.org/10.5194/se-9-629-2018>
- 25) *Papa, S., **Pennacchioni, G.**, Ross, J.A., Faccenda, M., 2018. The fate of garnet during (deep-seated) coseismic frictional heating: the role of thermal shock. *Geology* 46, 471-474. <https://doi.org/10.1130/G40077.1>
- 26) Menegon, L., **Pennacchioni, G.**, Malaspina, N., Harris, K., Wood, E., 2017. Earthquakes as precursors of ductile shear zones in the dry and strong lower crust. *Geochemistry, Geophysics, Geosystems* 18, 4356-4374. <https://doi.org/10.1002/2017GC007189>

- 27) Wex, S., Mancktelow, N.S., Hawemann, F., Camacho, A., **Pennacchioni, G.**, 2017. Geometry of a large-scale, low-angle, midcrustal thrust (Woodroffe Thrust, central Australia). *Tectonics* 36, 2447-2476. <https://doi.org/10.1002/2017TC004681>
- 28) Scambelluri, M., **Pennacchioni, G.**, Gilio, M., Bestmann, M., Plümper, O., Nestola, F., 2017. Fossil intermediate-depth earthquakes in subducting slabs linked to differential stress release. *Nature Geoscience* 10, 960–966. <https://doi.org/10.1038/s41561-017-0010-7>
- 29) *Ceccato, A., **Pennacchioni, G.**, Menegon, L., Bestmann, M., 2017. Crystallographic control and texture inheritance during mylonitization of coarse grained quartz veins. *Lithos* 290-291, 210-227. <https://doi.org/10.1016/j.lithos.2017.08.005>
- 30) Guastoni, A., Pozzi, G., Secco, L., Schiazza, M., **Pennacchioni, G.**, Fioretti, A.M., Nestola, F., 2016. Monazite-(Ce) and Xenotime-(Y) from an LCT, NYF Tertiary pegmatite field: evidence from a regional study in the Central Alps (Italy and Switzerland). *Canadian Mineralogist* 54, 863-877. <https://doi.org/10.3749/canmin.1600021>
- 31) **Pennacchioni, G.**, Ceccato, A., Fioretti, A.M., Mazzoli, C., Zorzi, F., Ferretti, P., 2016. Episyenites in meta-granitoids of the Tauern Window (Eastern Alps): unpredictable? *Journal of Geodynamics* 101, 73-87. <https://doi.org/10.1016/j.jog.2016.04.001>
- 32) Bestmann, M., **Pennacchioni, G.**, Mostefaoui S., Göken, M., De Wall, H., 2016. Instantaneous healing of micro-fractures during coseismic slip: evidence from microstructure and Ti in quartz geochemistry within an exhumed pseudotachylyte-bearing fault in tonalite. *Lithos* 254-255, 84-93. <https://doi.org/10.1016/j.lithos.2016.03.011>
- 33) Bestmann, M., **Pennacchioni, G.**, 2015. Ti distribution in quartz across a heterogeneous shear zone within a granodiorite: The effect of deformation mechanism and strain on Ti resetting. *Lithos* 227, 37-56. <https://doi.org/10.1016/j.lithos.2015.03.009>
- 34) *Guastoni, A., **Pennacchioni, G.**, Pozzi, G., Fioretti, A.M., Walter, J.M., 2014. Tertiary pegmatite dikes of the Central Alps. *Canadian Mineralogist* 52, 191-219. <https://doi.org/10.3749/canmin.52.2.191>
- 35) Mitterpergher, S., Dallai, L., Pennacchioni, G., Renard, F., Di Toro, G., 2014. Origin of hydrous fluids at seismogenic depth: Constraints from natural and experimental fault rocks. *Earth and Planetary Science Letters* 385, 97-109. <https://doi.org/10.1016/j.epsl.2013.10.027>
- 36) Mancktelow, N.S., **Pennacchioni, G.**, 2013. Late magmatic healed fractures in granitoids and their influence on subsequent solid-state deformation. *Journal of Structural Geology* 57, 81-96, <https://doi.org/10.1016/j.jsg.2013.09.006>
- 37) Druguet, E., Passchier, C.W., **Pennacchioni, G.**, Carreras, J., 2013. Geoethical education: A critical issue for geoconservation. *Episodes* 36, 11-18.
- 38) **Pennacchioni, G.**, Mancktelow, N.S., 2013. Initiation and growth of strike-slip faults within intact metagranitoid (Neves area, Eastern Alps, Italy). *Geological Society of America Bulletin* 125, 1468-1483. <https://doi.org/10.1130/B30832.1>
- 39) **Pennacchioni, G.**, Zucchi, E., 2013. High-temperature fracturing and ductile deformation during cooling of a pluton: the Lake Edison granodiorite (Sierra Nevada batholith, California). *Journal of Structural Geology* 50, 54-81. <https://doi.org/10.1016/j.jsg.2012.06.001>
- 40) *Pittarello, L., **Pennacchioni, G.**, Di Toro, G., 2012. Amphibolite-facies pseudotachylytes in Premosello metagabbros and felsic mylonites (Ivrea Zone, Italy). *Tectonophysics* 580, 43-57. <https://doi.org/10.1016/j.tecto.2012.08.001>
- 41) Di Toro, G., Mitterpergher, S., Ferri, F., Mitchell, T., **Pennacchioni, G.**, 2012. The contribution of structural geology, experimental rock deformation and numerical modelling to an improved understanding of the seismic cycle - Preface to the Special Volume "Physicochemical processes in seismic faults". *Journal of Structural Geology* 3. <https://doi.org/10.1016/j.jsg.2012.01.025>
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B) OTHER PUBLICATIONS (ENGLISH & ITALIAN)

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• C) GEOLOGICAL MAPPING

- ENEA and European Economic Community Research and Development Programme (1981-1986) in collaboration with Agip and Agip Nucleare: geological-structural mapping of the Uranium district of the Val Vedello (Lombardia, Italy). Role: field mapping, and microstructural/ petrographic study.
 - Map: Structural Map of the Central Orobic Alps (Armisa – Venina – Seriana Valleys), 1:25.000 scale) in Cadel et al. (1996), Mem. Sci. Geol. 48, 1-53.
- Project CARG -Valle d'Aosta:
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 - **Sheet "Cervino"**. Role: i) Field mapping in basement units; ii) mapping director and expert for the structural aspects.
- Project CARG-Pat (provincia Autonoma di Trento):
 - Brack, P., Dal Piaz, G.V., Baroni, C., Carton, A., Nardin, M., Pellegrini, G.B., **Pennacchioni, G.** et al., 2008. Carta Geologica d'Italia alla scala 1:50.000 (Geological Map of Italy, 1:50.000 scale): **Sheet 058 - Monte Adamello, Geological map and Explanatory notes**. APAT, Provincia Autonoma di Trento, 138 pp. Role: i) Mapping Director for basement units; ii) Instructor for mapping.