

PERSONAL INFORMATION

Alessandro Cavallo



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Date of birth 11/04/1972 | Nationality Italian

WORK EXPERIENCE

From February 2022

Associate Professor (scientific sector 04/A1 SSD GEO/09)
University of Milano-Bicocca (Italy)

Main research activities

- Research and characterization of Critical Raw Materials (CRM)
- Sustainable mining & circular economy
- Characterization of ore & industrial minerals
- Quarries and mines
- Recovery of tailings and mining wastes
- Dimension stones
- Naturally-occurring asbestos (NOA)
- Industrial hygiene
- Construction and building materials (lime, cement, aggregates)

Teaching activity

- Teaching of the master's degree Course "Industrial and Environmental Mineralogy"
- Teaching of the master's degree Course "Science and Economics of Renewable and Non-Renewable Resources"
- Teaching of the bachelor's degree Course "Basics of Ore Geology"
- Teaching of the PhD Course "Critical Raw Materials and their environmental impact"
- Teaching of the BBetween Sustainability Course "Critical Raw Materials and the environment"

December 2008 – January 2022

Researcher – Assistant Professor (scientific sector 04/A1 SSD GEO/09)
University of Milano-Bicocca (Italy)

2005 - 2008

Research fellow
University of Milano-Bicocca (Italy)

2001 - 2005

Geological technician
Applied geology and geophysics companies

EDUCATION AND TRAINING

- 2001 - 2004 **PhD in Earth Sciences**
 University of Milano (Italy)
 PhD thesis: "The Malenco serpentinite: ore deposits, petrographic, technical characteristics and environmental issues". February 1, 2005.
- 1996- 2001 **Master's degree in Geological Sciences**
 University of Milano (Italy)
 Mater Degree thesis: "*Beole & beole*: a technical, historical and commercial survey of *Beole* from Ossola valley".

PERSONAL SKILLS

Mother tongue(s) Italian and German.

Other language(s)

| | UNDERSTANDING | | SPEAKING | | WRITING |
|---------|---------------|---------|--------------------|-------------------|---------|
| | Listening | Reading | Spoken interaction | Spoken production | |
| English | C1 | C1 | C1 | C1 | C1 |

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
 Common European Framework of Reference for Languages

Organisational / managerial skills

Participant of research unit in the PRIN 2010-11 "Mineralogical and physico-chemical characteristics of mineral fibers, reactivity and impact on human health". Collaboration in several national and international research projects: (INTERREG PIC-IIIa Val d'Ossola - Italy/Canton Ticino - Switzerland; INAIL-Direzione Regionale Lombardia, INAIL-Direzione Generale; INTERREG IIIa (Val d'Ossola - Italy/Canton Ticino - Switzerland O. S.M.A.T.E.R. - *Osservatorio Subalpino Materiali Territorio Restauro*; Universidad Nacional de Salta - Facultad de Ciencias Naturales (Argentina): relations between tectonics and volcanism along the Calama-Olacapato-El Toro tectonic line - Argentina; Fondazione Lombardia per l'Ambiente (FLA); Round Robin mining dumps Val d'Aosta; FIBERS: the UNIMORE research group on mineral fibres; CARIPLO ANTICARB project; CARIPLO A-FIRE project.

Scientific responsible for commissioned research contracts with the following companies: Antolini Luigi & C. S.p.A.; FILMS S.p.A.; Dolomite Franchi S.p.A.; CIMProgetti s.r.l.; Toto Costruzioni S.p.A.; M.P.s.u.r.l.; Ecoconsulting s.r.l.; Reale Mutua Assicurazioni S.p.A.; BASF Construction Chemicals Italia S.p.A.; Tecnologie d'Impresa s.r.l.; Marmi Mauri s.r.l.; Nuova Serpentino d'Italia s.r.l.; Consorzio Estrattori Pietre Ornamentali della Provincia di Sondrio; ZAFSA s.r.l.; Centro Servizi Lapideo del VCO; Serpentino e Graniti s.r.l.; Industrie Tessili Bresciane S.p.A.; Labor Solutions s.r.l., Nuova Sima s.r.l.

Scientific head of the SEM-EDS and XRD laboratory of the university of Milano-Bicocca for the analysis of asbestos-containing materials, with accreditation from the Ministry of Health in accordance with Ministerial Decree 14/5/96 and the State-Regions agreement CSR 80 of 07/05/2015

Job-related skills

He has published more than 70 papers in national and international journals and has a Scopus h-index of 16. In possession of the national scientific qualification (ASN) for associate professor of SSD 04/A1-GEO-09 scientific sector. He actively collaborates with several research institutions including University of Torino (Italy), University of Oulu (Finland), CNRS-IS Terre Université de Grenoble Alpes (France), University of Modena and Reggio Emilia (Italy), Department of Geological Engineering, Hacettepe University, Ankara (Turkey), as well as scientific referee for commissioned research contracts with many private companies of the mining, quarrying, construction and environmental sector.

Other skills Blasting licence.

Driving licence B driving licence.

ADDITIONAL INFORMATION

Projects

- Personal funds from research activities commissioned by private companies: 501,389.24 €.
- Participant in the project CARIPO A-FIRE "Asbestos Fast Inertization and REcycling", funding 240,000.00 €.
- Participant in the CARIPO ANTICARB project "Quarry waste ANTIgorite CARBonation: a zero-emission platform for re-manufacturing with the benefit of CO₂ sequestration", funding € 300,000.00 €.
- Collaboration with the team "FIBERS: the UNIMORE research group on mineral fibres". Scientific manager: Prof. A. F. Gualtieri (University of Modena and Reggio Emilia). XRD, SEM-EDS and WDS analysis of samples of asbestos and other mineral fibers. <https://fibers.unimore.it/>
- Project "Round Robin mining dumps Val d'Aosta", responsible Prof. Alessandro Gualtieri (University of Modena and Reggio Emilia). The project involves several Italian research institutions (e.g. University of Bologna, University of Milano-Bicocca, University of Turin, ARPA Regione Val d'Aosta).
- Consulting activity for Fondazione Lombardia per l'Ambiente (FLA) "Technical-legal investigation for the support of the research and experimentation program on mineral and energy resources in Regione Lombardia".
- Collaboration between INAIL-Direzione Regionale Lombardia, INAIL-Direzione Generale and Università degli Studi di Milano-Bicocca "The impact of the natural environment on human health: the INAIL contribution to medical geology".
- Collaboration with Prof. Umran Dogan (Earth Sciences Department, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia) and Prof. Meral Dogan (Department of Geological Engineering, Hacettepe University, Ankara, Turkey) in the research and characterization of fibrous zeolites, with particular regard to erionite (classified as a Category I Carcinogen by the World Health Organization) in Italy.
- Participation to the study and research activities related to the three-year project (2003-2005) INTERREG PIC-III A (Val d'Ossola - Italy/Canton Ticino - Switzerland) entitled: "Valorization of sludges deriving from stone processing". Total project Italian part: € 125,409.00
- Participation to the study and research activities related to the three-year project (2005-2007) INTERREG III A (Val d'Ossola - Italy/ Canton Ticino - Switzerland) entitled: O.S.M.A.T.E.R. (*Osservatorio Subalpino Materiali Territorio Restauro*). Total project Italian part: 425,000.00 €.
- Agreement between the University of Milan-Bicocca and the Universidad Nacional de Salta - Facultad de Ciencias Naturales, responsible of the Italian unit prof. Alessandro Tibaldi: relations between tectonics and volcanism along the Calama-Olacapato-EI Toro tectonic line (Andes, NW Argentina).

Publications

ARTICLES IN ISI JOURNALS

- 1) Bussolesi, M.; Grieco, G.; **Cavallo, A.**; Hyseni, Q.; Farina, F. (2026). Melt-rock interaction driving extreme titanium and vanadium enrichments during the multi-stage post-magmatic evolution of chromite from the Mirdita Ophiolite, Kosovo. LITHOS, 534–535, 108546, DOI: 10.1016/j.lithos.2026.108546.
- 2) D'Amico, M. E.; Bonifacio, E.; **Cavallo, A.**; Egli, M.; Previtali, F. (2026). The role of weathering and aeolian inputs on clay minerals and geochemistry in Podzols on ophiolitic materials. GEODERMA, 468 (2026) 117772, DOI: 10.1016/j.geoderma.2026.117772.
- 3) Coletti, G.; Mariani, L.; Malinverno, E.; Vimercati, A.; Di Celma, C.; Collareta, A.; Molli, G.; Sarti, G.; Bianucci, G.; Aguilera, O.; **Cavallo, A.**; Urbina, M.; Bosio, G. (2026). A window into a middle Eocene mesotrophic mixed siliciclastic-carbonate system from the South American Pacific margin (Paracas Formation, Pisco Basin, Peru). JOURNAL OF SOUTH AMERICAN EARTH SCIENCES, 174, 105983, DOI: 10.1016/j.jsames.2026.105983.

- 4) Coletti, G.; Borromeo, L.; Fallati, L.; Luppichini, M.; Meroni, A.; Maspero, F.; Malinverno, E.; Bini, M.; Palli, J.; Basso, D.; Vezzoli, G.; Garzanti, E.; Bracchi, V. A.; Savini, A.; Desbiolles, F.; Pasquero, C.; Correggiari, A.; Comacchia, I.; Boschi, C.; Baneschi, I.; **Cavallo, A.**; Masotta, M.; Bosio, G.; Gallerani, A.; Fusi, N.; Mariani, L.; Galli, A.; Andò, S.; Bazzicalupo, P.; Consani, S.; Lazzarotti, Taccola, G. (2025). Combining instrumental, historical, and coastalmarine sedimentary archives to analyse floods variability in northwestern Italy during the last thousand years. *QUATERNARY SCIENCE ADVANCES*, 19, 100289, DOI: 10.1016/j.qsa.2025.100289.
- 5) Eslami, A.; Malvoisin, B.; Fukuyama, M.; Godard, M.; Ichiyama, Y.; Elöd Aradi, L.; Michibayashi, K.; Wang, Z.; Li, M.; **Cavallo, A.** (2025). Xonolite and pectolite in rodingites from the Samail ophiolite: Markers of reducing conditions and element transfer during peridotite-gabbro interaction. *LITHOS*, DOI: 10.1016/j.lithos.2025.108160.
- 6) Bussolesi, M.; Grieco, G.; Zaccarini, F.; Xiong, F.; **Cavallo, A.** (2025). The effect of multiple alteration processes of Skyros chromitites (Northern Sporades, Greece). *OFIOLITI*, 50(1), 1-16, DOI: 10.4454/ofioliti.v50i1.575.
- 7) Bussolesi, M.; **Cavallo, A.**; Gazea, V.; Tzamos, E.; Grieco, G. (2024). Implementing Antimony Supply and Sustainability Measures via Extraction as a By-Product in Skarn Deposits: The Case of the Chalkidiki Pb-Zn-Au Mines. *SUSTAINABILITY*, 16, 8991, DOI: 10.3390/su16208991.
- 8) Mariani, L.; Coletti, G.; Bosio, G.; Guillem, M. V.; Mubashir, A.; **Cavallo, A.**; Mitterpergher, S.; Malinverno, E. (2024). Tectonically-controlled biofacies distribution in the Eocene Foraminiferal Limestone (Pag, Croatia): A quantitative-based palaeontological analysis. *SEDIMENTARY GEOLOGY*, 472, 106743, DOI: 10.1016/j.sedgeo.2024.106743.
- 9) Zhao, X.; Khelifi, F.; Casale, M.; **Cavallo, A.**; Padoan, E.; Yang, K.; Dino, G.A. (2024). Critical Raw Materials Supply: Challenges and Potentialities to Exploit Rare Earth Elements from Siliceous Stones and Extractive Waste. *RESOURCES*, 13, 97, DOI: 10.3390/resources13070097.
- 10) Fantini, R.; Sisti, M.; Arletti, R.; Malferrari, D.; Gamberini, M. C.; Zapparoli, M.; Da Val, F.; **Cavallo, A.**; Gualtieri, A.F. (2024). Identification and quantification protocol of hazardous-metal bearing minerals: Ni in serpentinite rocks from Valmalenco (Sondrio, Central Alps, Northern Italy). *JOURNAL OF HAZARDOUS MATERIALS*, 134928, DOI: 10.1016/j.jhazmat.2024.134928.
- 11) Bosio, G.; Gioncada, A.; Malinverno, E.; Coletti, G.; Collareta, A.; Mariani, L.; **Cavallo, A.**; Bianucci, G.; Urbina, M.; Di Celma, C. (2024). Unraveling marine phosphogenesis along the Miocene coast of Peru: Origin and sedimentological significance of the Pisco Formation phosphorites. *MARINE AND PETROLEUM GEOLOGY*, 167, 106941, DOI: 10.1016/j.marpetgeo.2024.106941.
- 12) Somigliana, A.B.; Barbieri, P.G.; **Cavallo, A.**; Colombo, R.; Consonni, D.; Mirabelli, D. (2023). Lung asbestos fiber burden analysis: effects of the counting rules for legal medicine evaluations. *INHALATION TOXICOLOGY*, DOI: 10.1080/08958378.2023.2285789.
- 13) Corti, N.; Bonali, F.L.; Russo, E.; Kyriaki, D.; Pasquarè Mariotto, F.; Gudmundsson, A.; Esposito, R.; **Cavallo, A.**; Tibaldi, A. (2023). Feeders vs arrested dikes: A case study from the Younger Stampar eruption in Iceland. *JOURNAL OF VOLCANOLOGY AND GEOTHERMAL RESEARCH*, 443, 107914. DOI: 10.1016/j.jvolgeores.2023.107914.
- 14) Di Capua, A.; Miano, S.; Campagnolo, D.; Bonomo, S.; Caruso, A.; Carugati, G.; **Cavallo, A.**; Livio, F.A.; Vezzoli, G. (2023). Multi-proxy signatures in deep-water fine-grained sediments: Inherited versus syn-sedimentary factors controlling sediment compositions within a foredeep basin (Paleogene Adriatic foredeep – Northern Italy). *MARINE AND PETROLEUM GEOLOGY*, 106473. DOI: 10.1016/j.marpetgeo.2023.106473.
- 15) D'Amico, M. E.; Casati, E.; Abu El Khair, D.; **Cavallo, A.**; Barcella, M.; Previtali, F. (2023). Aeolian inputs and dolostone dissolution involved in soil formation in Alpine karst landscapes (Corna Bianca, Italian Alps). *CATENA*, 230, 107254. DOI: 10.1016/j.catena.2023.107254.
- 16) Eslami, A.; Grieco, G.; Bussolesi, M.; Ichiyama Y.; Lenaz D.; Skogby H.; Kutyrev A. V.; **Cavallo, A.**; Khedr, M.Z. (2023). Co-occurrence of compositionally variable chromitites in the Sabzevar ophiolite, NE Iran. *LITHOS*, 107133. DOI: 10.1016/j.lithos.2023.107133.
- 17) Grieco, G.; **Cavallo, A.**; Marescotti, P.; Crispini, L.; Tzamos, E.; Bussolesi, M. (2023). The Formation of Magnesite Ores by Reactivation of Dunite Channels as a Key to Their Spatial Association to Chromite Ores in Ophiolites: An Example from Northern Evia, Greece. *MINERALS*, 13, 159. DOI: 10.3390/min13020159.
- 18) **Cavallo, A.**; Dino, G.A. (2022). Extractive Waste as a Resource: Quartz, Feldspars, and Rare Earth Elements from Gneiss Quarries of the Verbano-Cusio-Ossola Province (Piedmont, Northern Italy). *SUSTAINABILITY*, 14, 4536; DOI: 10.3390/su14084536.
- 19) Di Gregorio, A.; **Cavallo, A.**; Lanzi, C.; Morrone, M.; Tortora, D. (2022). Analisi del fabbisogno di materie prime critiche in Italia. La nuova sfida per le materie prime strategiche non energetiche. *ESPERIENZE D'IMPRESA*, 1/2021, 5-42, ISSN 1971-5293, Carocci Editore S.p.A.
- 20) Di Capua, A.; Pandini, R.; Barilaro, F.; **Cavallo, A.**; Livio, F. (2022). Drainage pattern evolution during continental indentation in Central Alps: Constraints from the sedimentary record of associated deep-water clastic offshoots. *MARINE AND PETROLEUM GEOLOGY*, 105846; DOI: 10.1016/j.marpetgeo.2022.105846.

- 21) Cocomazzi, G., Grieco, G., Sinojmeri, A., **Cavallo, A.**, Bussolesi, M., Ferrari, E.S., Destefanis, E. (2022). Buffering copper tailings acid mine drainage: modeling and testing at Fushë Arrëz flotation plant, Albania. *WATER*, 14, 2398; DOI: 10.3390/w14152398.
- 22) Vola, G., Ardit, M., Frijia, G., **Cavallo, A.**, Natali, C., Balma Mion, C., Lugli, F., Primavori, P. (2022). Archaeometric characterization of historical-contemporaneous marbles from Waldensian Valleys of Piedmont (Dora-Maira Massif, Cottian Alps, Italy). *JOURNAL OF ARCHAEOLOGICAL SCIENCE: REPORTS*, 45, 103562; DOI: 10.1016/j.jasrep.2022.103562.
- 23) **Cavallo, A.** (2022). "Serpentino della Valmalenco" (Central Alps, Northern Italy): A green dimension stone with outstanding properties. *RESOURCES POLICY*, 75, 102467; DOI: 10.1016/j.resourpol.2021.102467.
- 24) Bussolesi, M., Grieco, G., Zaccarini, F., **Cavallo, A.**, Tzamos, E., Stomi, N. (2022). Chromite compositional variability and associated PGE enrichments in chromitites from the Gomati and Nea Roda ophiolite, Chalkidiki, Northern Greece. *MINERALIUM DEPOSITA*. DOI: 10.1007/s00126-022-01109-z.
- 25) Bussolesi, M., Grieco, G., **Cavallo, A.**, Zaccarini, F. (2022): Different Tectonic Evolution of Fast Cooling Ophiolite Mantles Recorded by Olivine-Spinel Geothermometry: Case Studies from Iballo (Albania) and Nea Roda (Greece). *MINERALS*, 12, 64; DOI: 10.3390/min12010064.
- 26) Dino, G.A., **Cavallo, A.**, Faraudello, A., Rossi, P., Mancini, S. (2021). Raw materials supply: Kaolin and quartz from ore deposits and recycling activities. The example of the Monte Bracco area (Piedmont, Northern Italy). *RESOURCES POLICY*, 74, 102413; DOI: 10.1016/j.resourpol.2021.102413.
- 27) Grieco, G., Sinojmeri, A., Bussolesi, M., Cocomazzi, G., **Cavallo, A.** (2021). Environmental Impact Variability of Copper Tailing Dumps in Fushe Arrez (Northern Albania): The Role of Pyrite Separation during Flotation. *SUSTAINABILITY*, 13(17), 9643; DOI: 10.3390/su13179643.
- 28) Vola, G., Ardit, M., Sarandrea, L., Brignoli, G., Natali, C., **Cavallo, A.**, Bianchini, G., Cruciani, G. (2021). Investigation and prediction of sticking tendency, blocks formation and occasional melting of lime at HT (1300 °C) by the overburning test method. *CONSTRUCTION AND BUILDING MATERIALS*, 294, 123577, DOI: 10.1016/j.conbuildmat.2021.123577.
- 29) Eslami, A., Malvoisin, B., Brunet, F., Kananian, A., Bach, W., Grieco, G., **Cavallo, A.**, Gatta, G.D. (2021). Podiform magnetite ore(s) in the Sabzevar ophiolite (NE Iran): oceanic hydrothermal alteration of a chromite deposit. *CONTRIBUTIONS TO MINERALOGY AND PETROLOGY*, 176:43, DOI: 10.1007/s00410-021-01799-0.
- 30) Marian, N.M., Giorgetti, G., Magrini, C.a., Capitani, G.C., Galimberti, L., **Cavallo, A.**, Salvini, R., Vanneschi, C., Viti, C. (2021). From hazardous asbestos containing wastes (ACW) to new secondary raw material through a new sustainable inertization process: A multimethodological mineralogical study. *JOURNAL OF HAZARDOUS MATERIALS*, Volume 413, Article number 125419, DOI: 10.1016/j.jhazmat.2021.125419.
- 31) Eslami, A., Malvoisin, B., Grieco, G., Aradi, L.E., Marchesi, C., **Cavallo, A.**, Montanini, A., Borghini, G., Mathur, R., Ikehata, K., Davis, D.W., Li, C.-H., Szabó, C. (2021). Native copper formation associated with serpentinization in the Cheshmeh-Bid ophiolite massif (Southern Iran). *LITHOS*, Volume 382-383, February 2021, Article number 105953, DOI: 10.1016/j.lithos.2020.105953.
- 32) Petriglieri, J.R. Bersani, D., Laporte-Magoni, C., Tribaudino, M., **Cavallo, A.**, Salvioli-Mariani, E., Turci, F. (2021). Portable raman spectrometer for in situ analysis of asbestos and fibrous minerals. *APPLIED SCIENCES*, Volume 11, Issue 1, 1 January 2021, Article number 287, 1-14. DOI: 10.3390/app11010287.
- 33) **Cavallo, A.**, Petriglieri, J. R. (2020). Naturally Occurring Asbestos in Valmalenco (central Alps, Northern Italy): from Quarries and Mines To Stream Sediments. *ENVIRONMENTAL & ENGINEERING GEOSCIENCE*, vol. XXVI, p. 47-52, ISSN: 1078-7275, DOI: 10.2113/EEG-2270.
- 34) Grieco, G., Bussolesi, M., Eslami, A., Gentile, A., **Cavallo, A.**, Lian, D., Yang, J., Ghaseminejad, F. (2020). Differential platinum group elements (PGE) re-mobilization at low fS₂ in Abdasht and Soghan mafic-ultramafic complexes (Southern Iran). *LITHOS*, vol. 366-367, 105523, ISSN: 0024-4937, DOI: 10.1016/j.lithos.2020.105523.
- 35) Bussolesi, M., Grieco, G., Eslami, A., **Cavallo, A.** (2020): Ophiolite Chromite Deposits As a New Source for the Production of Refractory Chromite Sands. *SUSTAINABILITY*, vol. 12, 7096, ISSN: 2071-1050, DOI: 10.3390/su12177096.
- 36) Petriglieri, J. R., Laporte-Magoni, C., Salvioli-Mariani, E., Tomatis, M., Gazzano, E., Turci, F., **Cavallo, A.**, Fubini, B. (2020). Identification and Preliminary Toxicological Assessment of a Nonregulated Mineral Fiber: Fibrous Antigorite from New Caledonia. *ENVIRONMENTAL & ENGINEERING GEOSCIENCE*, vol. 26, p. 89-97, ISSN: 1078-7275, DOI: 10.2113/EEG-2274.
- 37) Dino, G. A., **Cavallo, A.**, Rossetti, P., Garamvölggyi, E., Sándor, R., Coulon, F. (2020). Towards Sustainable Mining: Exploiting Raw Materials from Extractive Waste Facilities. *SUSTAINABILITY*, vol. 12, 2383, ISSN: 2071-1050, DOI: 10.3390/su12062383.
- 38) **Cavallo, A.** (2020). Environmental asbestos contamination in an abandoned chrysotile mining site: the example of Val Malenco (central Alps, northern Italy). *EPISODES*, vol. 43, p. 851-858, ISSN: 0705-3797, DOI: 10.18814/epiugs/2020/0200s01.

- 39) **Cavallo, A.**, Dino, G.A. (2019). The Bargiolina, a Striking Historical Stone from Monte Bracco (Piedmont, NW Italy) and a Possible Source of Industrial Minerals. *SUSTAINABILITY*, vol. 11, 4293, ISSN: 2071-1050, DOI: 10.3390/su11164293.
- 40) **Cavallo, A.**, Dino, G.A., Primavori, P. (2019). Gneisses (Serizzo and Beola) of the Verbano-Cusio-Ossola district (Piedmont, Northern Italy): possible candidates for the designation as a Global Heritage Stone Province. In: *Global Heritage Stone: Worldwide Examples of Heritage Stones*, in the Geological Society, London, Special Publications series. SP486. SPECIAL PUBLICATION - GEOLOGICAL SOCIETY OF LONDON, LONDON:Geological Society of London, ISSN: 0305-8719, DOI: 10.1144/SP486-2018-8.
- 41) Vola, G., Sarandrea, L., Della Porta, G., **Cavallo, A.**, Jadoul, F., Cruciani, G. (2018). The influence of petrography, mineralogy and chemistry on burnability and reactivity of quicklime produced in Twin Shaft Regenerative (TSR) kilns from Neoproterozoic limestone (Transvaal Supergroup, South Africa). *MINERALOGY AND PETROLOGY*, vol. 112, p. 555-576, ISSN: 0930-0708, DOI: 10.1007/s00710-017-0542-y.
- 42) **Cavallo, A.** (2018). Serpentinic waste materials from the dimension stone industry: Characterization, possible reuses and critical issues. *RESOURCES POLICY*, vol. 59, p. 17-23, ISSN: 0301-4207, DOI: 10.1016/j.resourpol.2018.08.003.
- 43) Coletti, G., El Kateb, A., Basso, D. M., **Cavallo, A.**, Spezzaferri, S. (2017). Nutrient influence on fossil carbonate factories: Evidence from SEDEX extractions on Burdigalian limestone (Miocene, NW Italy and S France). *PALAEOGEOGRAPHY PALAEOCLIMATOLOGY PALAEOECOLOGY*, vol. 475, p. 80-92, ISSN: 0031-0182, DOI: 10.1016/j.palaeo.2017.03.005.
- 44) Fantone, I., Grieco, G., Sinojmeri, A., **Cavallo, A.** (2017). A quantitative approach to the influence of pyrite separation on Cu-processing tailings: a case study at Repts, Mirdita district, Albania. *ENVIRONMENTAL EARTH SCIENCES*, vol. 76, p. 1-13, ISSN: 1866-6280, DOI: 10.1007/s12665-017-7078-7.
- 45) Pollastri, S., Perchiazzi N., Gigli, L., Ferretti, P., **Cavallo, A.**, Bursi Gandolfi, N., Pollok, K., Gualtieri, A.F. (2017). The crystal structure of mineral fibres. 2. Amosite and fibrous anthophyllite. *PERIODICO DI MINERALOGIA*, vol. 86, p. 55-65, ISSN: 2239-1002, DOI: 10.2451/2017PM693.
- 46) Belluso, E., **Cavallo, A.**, Halterman, D. (2017). Crystal habit of mineral fibres. In: Gualtieri A.F., *Mineral fibres: crystal chemistry, chemical-physical properties, biological interaction and toxicity*. vol. 18, p. 65-109, European Mineralogical Union, ISBN: 978-0903056-65-6, DOI: 10.1180/EMU-notes.18.3.
- 47) Di Capua, A., Vezzoli, G., **Cavallo, A.**, GropPELLI, G. (2016). Clastic sedimentation in the Late Oligocene Southalpine Foredeep: From tectonically controlled melting to tectonically driven erosion. *GEOLOGICAL JOURNAL*, vol. 51, p.338-353, ISSN: 0072-1050, DOI: 10.1002/gj.2632.
- 48) Pollastri, S., Perchiazzi, N., Lezzerini, M., Plaisier, J.R., **Cavallo, A.**, Dalconi, M.C., Bursi Gandolfi, N., Gualtieri, A.F. (2016). The crystal structure of mineral fibres. 1. Chrysotile. *PERIODICO DI MINERALOGIA*, vol. 85, p. 249-259, ISSN: 2239-1002, DOI: 10.2451/2016PM655.
- 49) Zanchi, A., Malaspina, N., Zanchetta, S., Berra, F., Benciolini, L., Bergomi, M., **Cavallo, A.**, Reza Javadi, H., Kouhpeyma, M. (2015). The Cimmerian accretionary wedge of Anarak, Central Iran. *JOURNAL OF ASIAN EARTH SCIENCES*, vol. 102, p. 45-72, ISSN: 1367-9120, DOI: 10.1016/j.jseaes.2014.08.030.
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- 52) **Cavallo, A.**, Dino, G.A. (2015). Granites of the Verbano-Cusio-Ossola district (Piedmont, northern Italy): Possible candidates for the designation of "global heritage stone province" – Volume 5 Urban Geology, Sustainable Planning and Landscape Exploitation. vol. 5, p. 267-271, Springer International Publishing, ISBN: 9783319090474, DOI: 10.1007/978-3-319-09048-1.
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- 59) **Cavallo, A.**, Bigioggero B., Colombo A., Tunesi A. (2004) – The Verbano Cusio Ossola province: a land of quarries in northern Italy (Piedmont). *Per. Mineral.*, 73, 197-210, SPECIAL ISSUE 3: a showcase of the Italian research in applied petrology.
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- 61) Di Gregorio, A.; Chierici, R.; **Cavallo, A.**; Lanzi, C.; Morrone, M.; Soriani, L., et al. (2025). Critical Raw Material. Quali Sfide per le Materie Prime Critiche, Strategiche e Rilevanti in Italia. Milano: CRIET - Centro di Ricerca Interuniversitario in Economia del Territorio, 360 pp.
- 62) Notarpietro, A., Pozzo, B., Rodeghiero, F., **Cavallo, A.**, Fanetti, S., Quistini, S. (2012) – Indagine tecnico-giuridica per il supporto del programma di ricerca e sperimentazione in materia di risorse minerarie ed energetiche in Regione Lombardia. Fondazione Lombardia per l'Ambiente, 401 pp.
- 63) Rodeghiero F. & **Cavallo, A.** (2011) – Idee guida per una valorizzazione del patrimonio minerario del Metallifero Triassico in Lombardia. In: Atzeni, P. et al. (Eds): *Recupero e valorizzazione delle miniere dismesse: lo stato dell'arte in Italia*. ISPRA, Quaderni - Ambiente e società n. 3/2011, 65-77, ISBN 978-88-448-0478-7.
- 64) Rimoldi, B., Pasquarè, G., Tibaldi, A., **Cavallo, A.**, Mattioli, M. & Renzulli, A. (2009) – Erionite: analisi preliminare alla valutazione di una potenziale esposizione per i lavoratori italiani. *Rivista degli infortuni e delle malattie professionali INAIL*, 1/2009, 143-154, ISSN 0035-5836.
- 65) **Cavallo, A.**, Dino G.A. (2009) – Le beole ossolane, un esempio di integrazione tra patrimonio lapideo, storia e paesaggio. *Architettura del Paesaggio - Paysage*, allegato al n°. 20, 2009, 15 pp, ISSN 1125-0259.
- 66) Dino, G.A., **Cavallo, A.** (2009) – Il Bianco Montorfano: potenzialità ed applicazioni nel costruito ossolano. *Architettura del Paesaggio - Paysage*, allegato al n°. 20, 2009, 14 pp, ISSN 1125-0259.
- 67) Bigioggero, B., Colombo, A., **Cavallo, A.**, Aldighieri, B. & Tunesi, A. (2007) – Geological-structural sketch-map of the Ossola-Simplon area (1: 50.000 map). 1906-2006 – 100 anni Traforo del Sempione. Litografia Artistica Cartografica, Firenze.
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- 69) **Cavallo, A.**, Colombo, A., Tunesi, A. (2006) - The “green stones” from Ossola valley (Piedmont, Northern Italy): historical use, petrography, geochemistry and physical properties. In: Cardu M., Ciccù R., Lovera E., Michelotti E. (Eds): *Mine Planning and Equipment Selection 2006*, 1, 625-630, ISBN 88-901342-4-0.
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- 74) **Cavallo, A.**, Rimoldi, B. (2005) – L'estrazione della serpentinite della Val Malenco: la problematica dell'esposizione dei lavoratori a fibre di amianto di origine naturale (NOA) – risultati delle indagini preliminari. Professione Geologo, 25, 15-20.
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CONFERENCE PROCEEDINGS (WITH REFEREE)

- 1) **European Geosciences Union General Assembly (EGU 2023, 23-28 April 2023, Vienna - Austria).**
Co-convenor of the session GMPV4.2 Critical and strategic raw materials for a sustainable development: ore deposits, new resources and recovery of mine wastes.
- I. **Cavallo, A.** Dimension stone industry waste: a new source of industrial minerals and critical raw materials? Session GMPV4.2, DOI: 10.5194/egusphere-egu23-1910, poster presentation.
 - II. Bussolesi, M., **Cavallo, A.**, Grieco, G., Tzamos, E. Critical Raw Materials supply in the EU: the case of Sb-rich Pb-Zn-Au mineralization, Chalkidiki, Greece. Session GMPV4.2, DOI: 10.5194/egusphere-egu23-6220, poster presentation.
 - III. Corti, N., Bonali, F.L., Russo, E., Pasquarè, F.M., Gudmundsson, A., Drymoni, K., Tibaldi, A., Esposito, R., **Cavallo, A.** Dike-arrest vs dike-propagation and associated surface stresses: an example from the Younger Stampar eruption (13th century), Reykjanes Peninsula, SW Iceland. Session GMPV8.1, DOI: 10.5194/egusphere-egu23-7218, oral presentation.
- 2) **Geosciences for a sustainable future (19-21 September 2022, Torino, Italy).**
- I. Vola, G., Ardit, M., Frijia, G., **Cavallo, A.**, Natali, C., Balma Mion, C., Lugli, F. & Primavori, P. Characterization and provenance of historical-contemporaneous marbles from the Waldensian valleys of Piedmont (Cottian Alps, Italy). 131, DOI: 10.3301/ABSGI.2022.02.
 - II. **Cavallo, A.** Soapstones from Valmalenco (Sondrio, central Alps): from archeology to modern uses. 198, DOI: 10.3301/ABSGI.2022.02
 - III. Dino, G.A., Mancini, S., **Cavallo A.** & Chiappino C. Towards a 4.0 extractive industry, more sustainable and responsible: best practices connected to dimension and ornamental stones exploitation. 199, DOI: 10.3301/ABSGI.2022.02
 - IV. Bussolesi, M., Grieco, G., Cocomazzi, G. & **Cavallo, A.** Overview of CRM-bearing minerals in the Co-Ni-As mineralisation of the Punta Corna mining complex, Northern Italy. 399, DOI: 10.3301/ABSGI.2022.02
 - V. Bussolesi, M., Grieco, G., Cocomazzi, G., Hyseni, Q., **Cavallo, A.** & Destefanis, E. Critical and other trace metals fractioning within the flotation plant at the Stan Terg Pb-Zn mine, Kosovo: implications on recovery and environmental hazard. 400, DOI: 10.3301/ABSGI.2022.02
 - VI. Cocomazzi, G., Bussolesi, M., Grieco, G., **Cavallo, A.**, Tzamos, E. & Lazetera, D. - The effect of texture and mineralogy on the possible recovery of Sb as a flotation by-product from the Stratonì Pb-Zn-Au skarn deposit (Chalkidiki, Northern Greece). 404, DOI: 10.3301/ABSGI.2022.02
- 3) **Goldschmidt Hawai'i 2022 (Goldschmidt 2022, 10 – 15 July 2022, Honolulu, USA).**
- I. Corti, M; Maroni, P; Militello, G; Yivlialin, R; Campione, M; Lucotti, A; Bussetti, G; Capitani, G; **Cavallo, A;** Malaspina, N. Microwave-assisted brucite and talc reactions with CO₂ as a proxy for Carbon Capture and Storage by Serpentine, session 8kP3 - Silicate mineral weathering and carbonate mineralization: applications of CO₂-fluid-mineral reactions to surficial and subsurface carbon capture and storage.
- 4) **European Geosciences Union General Assembly (EGU 2022, 23-37 May 2022, Vienna - Austria).**
- IV. **Cavallo, A.**, Dino, G.A. Quartz, feldspars and REE from gneiss waste materials: an example from the VCO province (Piedmont, northern Italy), session ERE4.3, abstract EGU22-3156, virtual presentation.

- V. Dino, G.A., **Cavallo, A.** Sustainable Raw Materials supply: towards a more domestical supply, session ERE4.3, abstract EGU22-8747, virtual presentation.
- 5) **RawMat2021 (International Conference on Raw Materials and Circular Economy, 05-09 September 2021, Athens - Greece).**
- I. **Cavallo, A.**, Bussolesi, M., Grieco, G. Serpentinites: from dimension stones to valuable industrial minerals.
 - II. Bussolesi, M., Grieco, G., Tzamos, E., **Cavallo, A.**, Marescotti, P., Crispini, L., Kasinos, A., Zouboulis, A. Mineralogical and isotopic study of magnesite veins in the Evia and Gerakini ultramafites (Greece).
 - III. Cocomazzi, G., Grieco, G., Sinojmeri, A., **Cavallo, A.**, Bussolesi, M. Implementation of a procedure for buffering acid mine drainage waters from pyrite-rich tailings at Fushë Arrëz copper enrichment flotation plant.
- 6) **European Geosciences Union General Assembly (EGU 2021, 19-30 April 2021, Vienna - Austria).**
- I. Grieco, G., Moroni, M., Bussolesi, M., **Cavallo, A.**, Orizio S. Spatial distribution of the ophiolite-hosted Co-Ni-As-rich hydrothermal mineralization in the Punta Corna Mining complex, Lanzo Valleys, Northern Italy, session ERE5.3, abstract EGU21-7589, vPICO presentation.
 - II. Marian, N.M., Giorgetti, G., Magrini, C., Capitani, G., Galimberti, L., **Cavallo, A.**, Salvini, R., Vanneschi, C., Viti, C. From hazardous asbestos containing wastes (ACW) to new secondary raw material through a new sustainable inertization process: a multimethodological mineralogical study, session ERE5.3, abstract EGU21-10825, vPICO presentation.
 - III. **Cavallo, A.**, Dino, G.A. The Crevoladossola marble (Piedmont, northern Italy): nine commercial varieties in just one quarry! session ERE5.1, abstract EGU21-12534, vPICO presentation.
 - IV. Dino, G.A., **Cavallo, A.**, Chiappino, C. Raw materials (CRM/SRM) supply from waste recycling and landfill mining: interdisciplinary approach to exploit resources from extractive waste facilities, session ERE5.3, abstract EGU21-12675, vPICO presentation.
- 7) **European Geosciences Union General Assembly (EGU 2020, 4-8 May 2020, Vienna - Austria).**
- I. **Cavallo, A.** Aggregates and naturally occurring asbestos: the need of a correct analytical approach.
 - II. Rodeghiero, F., **Cavallo, A.**, Dino, G.A. Kaolin and quartz from extractive waste: the example of the Monte Bracco area (Piedmont, northern Italy).
 - III. Dino, G.A., **Cavallo, A.**, Garamvölgy, E.; Sandor, R., Coulon, F. Towards sustainable mining: exploiting raw materials from extractive waste facilities.
- 8) **European Geosciences Union General Assembly (EGU 2019, 7 – 12 April 2019, Vienna - Austria).**
- I. **Cavallo, A.** Environmental asbestos contamination in an abandoned chrysotile mining site.
 - II. **Cavallo, A.**, Dino, G.A. The “Bargiolina”, an amazing historical stone from Monte Bracco (Piedmont, NW Italy).
- 9) **XIII IAEG CONGRESS - AEG 61st Annual Meeting- Engineering Geology for a Sustainable World (IAEG 2018, 17 – 21 September 2018, San Francisco, California, USA).**
- I. **Cavallo, A.**, Petriglieri, J. R. Naturally Occurring Asbestos in Valmalenco (Central Alps, Northern Italy): from Quarries and Mines to Stream Sediments.
 - II. Petriglieri, J. R., Laporte-Magoni, C., Salvioli-Mariani, E., Sala, O., Gunkel-Grillon, P., Tribaudino, M., Bersani, D., **Cavallo, A.** Environmental Risk of Fibrous Minerals in New Caledonia: A Monitoring Strategy.
 - III. Petriglieri, J. R., Laporte-Magoni, C., Salvioli-Mariani, E., Tomatis, M., Gazzano, E., Gunkel-Grillon, P., Turci, F., **Cavallo, A.**, Fubini, B. Not-Regulated Mineral Fibers – From the Identification to the Toxicity of Fibrous Antigorite from New Caledonia.
- 10) **European Geosciences Union General Assembly (EGU 2018, 8 – 13 April 2018, Vienna - Austria).**
- I. **Cavallo, A.**, Cazzamali, D. & Guerra, S. New approaches in dimension stone exploration: an example from the “Dorato Valmalenco” quarry (central Alps, northern Italy).

- II. **Cavallo, A.** Naturally occurring asbestos in soils and stream sediments: an example from Valmalenco (central Alps, northern Italy).
- 11) **Geosciences: a tool in a changing world - congresso congiunto AIV, SGI, SIMP e SoGel** (4 – 6 September 2017, Pisa).
 - I. **Cavallo, A.** Naturally occurring asbestos in serpentinite quarries: the Valmalenco case history. **KEYNOTE**.
- 12) **European Geosciences Union General Assembly (EGU 2017, 23 – 28 April 2017, Vienna - Austria).**
 - I. **Cavallo, A.** Serpentinic waste materials: possible reuses and critical issues.
 - II. **Cavallo, A.** Soapstones from the Ossola Valley (Piedmont, northern Italy).
- 13) **European Geosciences Union General Assembly (EGU 2016, 17 – 22 April 2016, Vienna - Austria).**
 - I. Dino, G.A., Borghi, A., **Cavallo, A.**, Primavori, P. Gneisses (Serizzi and Beole) of the Verbano-Cusio-Ossola district (Piedmont, Northern Italy): possible candidates for the designation of "Global Heritage Stone province".
 - II. **Cavallo, A.** Asbestos quantification in track ballast, a complex analytical problem.
- 14) Congresso **"La pietra ollare nelle Alpi. Coltivazione ed utilizzo nelle zone di provenienza"** (8 – 9 October 2016, Varallo Sesia - Italy).
 - I. **Cavallo, A.**, Guerra, S. La pietra ollare in Valmalenco. Caratteristiche geologiche e minerarie.
- 15) **European Geosciences Union General Assembly (EGU 2015, 12 – 17 April 2015, Vienna - Austria).**
 - I. **Cavallo, A.** Gneiss wastes as secondary raw material for the ceramic industry: an example from the Verbano Cusio Ossola district (Piedmont, north-western Alps, Italy).
 - II. **Cavallo, A.** (2015). The "green stones" of Valtellina and Valchiavenna (central Alps, northern Italy).
- 16) **IAEG 2014 Engineering Geology for Society and Territory - IAEG 50th Anniversary** (15 – 18 September 2014, Torino - Italy).
 - I. **Cavallo, A.**, Dino, G.A. Granites of the Verbano-Cusio-Ossola District (Piedmont, Northern Italy): Possible Candidates for the Designation of "Global Heritage Stone Province" and a Proposal of a Geotouristic Route.
- 17) **European Geosciences Union General Assembly (EGU 2013, 7 – 12 April 2013, Vienna - Austria).**
 - I. **Cavallo, A.** Chrysotile asbestos quantification in serpentinite quarries: a case study in Valmalenco, central Alps, northern Italy.
 - II. **Cavallo, A.**, Dino, G.A. The OSMATER project: promotion of stone materials from the Verbano-Cusio-Ossola region (Italy) and the Canton Ticino (Switzerland).
- 18) **European Geosciences Union General Assembly (EGU 2012, 22 – 27 April 2012, Vienna - Austria).**
 - I. **Cavallo, A.**, Rimoldi, B. Asbestos exposure during quarrying and processing of serpentinites: a case study in Valmalenco, Central Alps, Northern Italy.
 - II. **Cavallo, A.**, Rimoldi, B. Erionite and other fibrous zeolites in volcanic environments: the need for a risk assessment in Italy.
 - III. Bonali, F.L., Tibaldi, A., Corazzato, C., Lanza, F., **Cavallo, A.**, Nardin, A. Elastic stress interaction between faulting and volcanism in the Olacapato–San Antonio de Los Cobres area (NW Argentina).
- 19) **GEOMED 2011 International Conference on Medical Geology** (20 – 25 September 2011, Bari - Italy).
 - I. **Cavallo, A.**, Rimoldi, B., Dogan, M. & Dogan, A. U. Geology and health: the highly carcinogenic erionite mineral and the need for a risk assessment in Italy.
 - II. Rimoldi, B., **Cavallo, A.**, Guercio, A., Barbassa, E., Marena, G., Pisanelli, F., Santucci, P., Tripi, L., Massera, S. Naturally occurring asbestos in serpentinite quarries: a case study in Valmalenco, Central Alps, Northern Italy.
- 20) **Solid Earth - Basic Science for the Human Habitat", ILP's Second Potsdam Conference 2010** (21 – 23 September 2010, Potsdam - Germany).

- I. **Cavallo, A.**, Mattioli, M., Renzulli, A., Rimoldi, B., Tibaldi, A. First investigations about erionite and offretite in Italian volcanic environments.
 - II. **Cavallo, A.**, Nardin, A., Tibaldi, A., Corazzato, C., Lanza, F., Bonali, F.L. Relationship between structures, petrochemical features and hydrothermal alteration along the Plio-Quaternary Olacapato-San Antonio fault zone (NW Argentina).
 - III. Bonali, F.L., Tibaldi, A., **Cavallo, A.**, Corazzato, C., Lanza, F., Nardin, A. Elastic stress interaction between faulting and volcanoes along the Calama-Olacapato-EI Toro fault zone, Central Andes.
 - IV. Corazzato, C., Tibaldi, A., **Cavallo, A.**, Bonali, F.L., Lanza, F., Nardin, A. Plio- Quaternary kinematics and geometry of the Calama-Olacapato-EI Toro fault zone across the Puna Plateau, Argentina.
- 21) **ILP Joint Task Force Meeting 2009** (5 – 9 October 2009, Clermont Ferrand - France).
- I. **Cavallo, A.**, Mattioli, M., Pasquarè, G., Renzulli, A., Rimoldi, B., Tibaldi, A. Geology and Health: methodological study and volcanic origin of the highly cancerogenic erionite mineral. **KEYNOTE.**
- 22) **GEOITALIA 2009** (9 – 11 September 2009, Rimini - Italy).
- I. Rimoldi, B., **Cavallo, A.**, Massera, S., Sala, O., Pelosio, A., Boggio, P. Measuring naturally occurring airborne asbestos: the Lombardia and Emilia-Romagna experiences in the field and in the laboratory.
 - II. **Cavallo, A.**, Rimoldi, B., Massera, S., Guercio, A., Barbassa, E., Pisanelli, F., Marena, G., Santucci, P., Tripi, L. Evaluation of worker's exposure to naturally occurring asbestos in quarrying and processing of the "Serpentino della Val Malenco", Central Alps, Italy.
 - III. **Cavallo, A.**, Galimberti, L. Historical "green stones" from Ossola Valley (Piedmont, northern Italy): relations between microstructures and porosity (Hg-porosimetry).
- 23) **"Unicity, Uniformity and Universality in the Identification of the Landscape and Cultural Mosaic"** (18 – 19 September 2008, Aquileia - Italy).
- I. **Cavallo, A.**, Dino, G.A. Le beole ossolane, un esempio di integrazione tra patrimonio lapideo, storia e paesaggio.
 - II. Dino, G.A., & **Cavallo, A.** Il Bianco Montorfano: potenzialità ed applicazioni nel costruito ossolano.
- 24) **GEOITALIA 2007** (12 – 14 September 2007, Rimini - Italy).
- I. **Cavallo, A.** Asbestos in ornamental greenstones? A combined analytical approach.
 - II. **Cavallo, A.**, Dino, G.A. Quarrying and mining heritage in the VCO district: development of geotouristical routes.
 - III. **Cavallo, A.**, Dino, G.A., Colombo, A., Fornaro, M., Marini, P., Tunesi, A.M. Proposal for a technical regulation of ornamental stones: an example from the Verbano-Cusio-Ossola district.
- 25) **MPES Mine Planning and Equipment Selection 2006** (19 – 22 September 2006, Torino - Italy).
- I. **Cavallo, A.** The Malenco serpentinite (Sondrio, northern Italy): petrography, geochemistry and mechanical properties.
 - II. **Cavallo, A.**, Colombo, A., Tunesi, A. The "green stones" from Ossola valley (Piedmont, Northern Italy): historical use, petrography, geochemistry and physical properties.
- 26) **GEOITALIA 2005** (22 – 23 September 2005, Spoleto - Italy).
- I. Colombo, A., Barberini, V., **Cavallo, A.**, Galimberti, L., & Tunesi, A. Residual sludge from the ornamental stone industry in the Verbano-Cusio-Ossola district (Piedmont, NW Italy): mineralogy and chemistry.
 - II. **Cavallo, A.** Serpentinic cutting sludges from Valmalenco (Sondrio, N Italy): chemistry, mineralogy and possible reuses.
- 27) **32nd International Geological Congress (XXXII IGC 2004)**, 20 – 28 August 2004, Firenze - Italy).
- I. **Cavallo, A.** Quarrying and processing of serpentinite in Valmalenco (Sondrio, northern Italy): features and problems.
 - II. **Cavallo, A.**, Colombo, A., Tunesi, A. Stone industry in the Ossola Valley (NW Italy): the Serizzo and Beola ornamental stones.

- 28) **“From asbestos to nanoparticles: past experience for future challenges and needs in particle toxicology”** (28 – 30 June 2004, Torino - Italy).
Cavallo, A., Rimoldi, B., Ferrario, A. Asbestos risk in quarrying and processing of the “Serpentino della Val Malenco”, Central Alps: preliminary geological and environmental studies for risk assessment.