

ARTICLES PUBLIES EN 2020

1. AAZI M., KUDINOVA M., HUMBERT G., AUGUSTE J-L., **DELEPINE-LESOILLE S.**, KINET D., MEGRET P., Impact of H₂ gas on disruptive birefringence optical fibers with embedded Palladium particles for developing robust sensors, *Journal of Physical Photonics*, 2 (2020) 014005 <https://doi.org/10.1088/2515-7647/ab5cec>
2. AN N., CUI Y-J., **CONIL N.**, **TALANDIER J.**, **CONIL S.**, Soil-atmosphere interaction in the overburden of a short-lived low and intermediate level nuclear waste (LLW/ILW) disposal facility, *Computers and Geotechnics*, 124, <https://doi.org/10.1016/j.compgeo.2020.103610>
3. ALBINA, P., DURBAN, N., BERTRON, A., SCHIETTEKATTE, M., **ALBRECHT, A.**, **ROBINET, J-C.**, Erable, B. (2020) Adaptation of neutrophilic *Paracoccus denitrificans* to denitrification at highly alkaline pH. *Environmental Science and Pollution Research*, <https://doi.org/10.1007/s11356-020-08360-9>
4. **ARCHEZ J.**, **TEXIER-MANDOKI N.**, **BOURBON X.**, CARON J.F, ROSSIGNOL S., Influence of the Wollastonite and glass fibers on geopolymer composites workability and mechanical properties, *Construction & Building Materials*, 257, <https://doi.org/10.1016/j.conbuildmat.2020.119511>
5. BAHOUT, J.; OUERDANE, Y.; EL HAMZAOUI, H.; BOUWMANS, G.; BOUZAOU, M.; CASSEZ, A.; BAUDELLE, K.; HABERT, R.; MORANA, A.; BOUKENTER, A.; GIRARD, S.; CAPOEN, B. Cu/Ce-co-Doped Silica Glass as Radioluminescent Material for Ionizing Radiation Dosimetry. *Materials* 2020, 13, 2611. <https://doi.org/10.3390/ma13112611>
6. BARTH N., GEORGE D., BOUYER F., SCHWARTZ A., LAMBERT C-H, AHZI S., RÉMOND Y., An inverse method predicting thermal fluxes in nuclear waste glass canisters during vitrification and cooling. *Nuclear Engineering and Design*, vol 364, p110686 <https://doi.org/10.1016/j.nucengdes.2020.110686>
7. BOUMAIZA H., DUTOURNIÉ P., LE MEINS J.-M., LIMOUSY L., BRENDLÉ J., **MARTIN C.**, **MICHAU N.**, Dzene L., Iron-rich clay mineral synthesis using design of experiments approach, *Applied Clay Science*, Volume 199, 2020, 105876, <https://doi.org/10.1016/j.clay.2020.105876>
8. BRAUD I., CHAFFARD V., COUSSOT C., GALLE S., JUEN P., ALEXANDRE H., BAILLION O., BATAIS A., BOUDEVILLAIN B., BRANGER F., BRISSEBRAT G., CAILLETAUD R., COCHONNEAU G., DECOUPES R., DESCONNETS J.C., DUBREUIL A., FABRE J., GABILLARD S., GÉRARD M.F., GRELLET S., HERRMANN A., LAARMAN O., LAJEUNESSE E., LE HÉNAFF G., LOBRY O., MAUCLERC A., PAROISSIEN J.B., PIERRET M.C., SILVERA N. & SQUIVIDANT H., 2020. Building the information system of the French Critical Zone Observatories network: Theia/OZCAR-IS, *Hydrological Sciences Journal*, <https://doi.org/10.1080/02626667.2020.1764568>
9. BRIGAUD B., BONIFACIE M., PAGEL M., BLAISE T., CALMELS D., HAURINE F., **LANDREIN P.**; Past hot fluid flows in limestones detected by $\Delta 47$ -(U-Pb) and not recorded by other geothermometers. *Geology* ; 48 (9): 851–856. <https://doi.org/10.1130/G47358.1>
10. BULIDON N., **DEYDIER V.**, **BUMBIELER F.**, DURET-THUAL C., MENDIBIDE C., **CRUSSET D.**, Stress corrosion cracking susceptibility of P285NH and API 5L X65 steel grades in the high-level radioactive waste repository cell concept, *Materials and corrosion*, 2020; 1– 12, <https://doi.org/10.1002/maco.202011842>
11. CARRIERE C., NEFF D., **MARTIN C.**, TOCINO F., DELANOË A., GIN S., **MICHAU N.**, **LINARD Y.**, DILLMANN P., AVM nuclear glass/steel/argillite claystone system altered by CO_x Callovo-Oxfordian poral water with and without cement-bentonite grout at 70°C, *Materials and Corrosion*. 2020; 1– 9. <https://doi.org/10.1002/maco.202011766>
12. **CHAPOULADE E.**, TALON A., CHATEAUNEUF A., BREUL P., **HERMAND G.**, **LECONTE M.**, Sensors position optimization for monitoring the convergence of radioactive waste storage tunnel, *Nuclear Engineering and Design*, Volume 367, 2020, 110778, <https://doi.org/10.1016/j.nucengdes.2020.110778>
13. CHARTIER D., SANCHEZ-CANET J., ANTONUCCI P., ESNOUF S., RENAULT J-P., FARCY O., LAMBERTIN D., PARRAUD S., LAMOTTE H., CAU DIT COUMES C., Behaviour of magnesium phosphate cement-based materials under gamma and alpha irradiation, *Journal of nuclear*

14. COMTE J., GUY C., GOSMAIN L., PARRAUD S., Determining the porosity and water impregnation in irradiated graphite, *Journal of Nuclear Materials*, 528, <https://doi.org/10.1016/j.jnucmat.2019.151816>
15. DEBURE, M., GRANGEON, S., ROBINET, J. C., MADÉ, B., FERNÁNDEZ, A. M., & LEROUGE, C., Influence of soil redox state on mercury sorption and reduction capacity, *Science of The Total Environment*, 707, 136069, <https://doi.org/10.1016/j.scitotenv.2019.136069>
16. DE MOTTE R., BASILICO E., MINGANT R., KITTEL J., ROPITAL F., COMBRADE P., NECIB S., DEYDIER V., CRUSSET D., MARCELIN S., A study by electrochemical impedance spectroscopy and surface analysis of corrosion product layers formed during CO₂ corrosion of low alloy steel, *Corrosion Science*, <https://doi.org/10.1016/j.corsci.2020.108666>
17. DILER E., LEBLANC V., GUEUNÉ H., LARCHÉ N., DEYDIER V., LINARD Y., CRUSSET D., THIERRY D., Potential influence of microorganisms on the corrosion of carbon steel in the French high- and intermediate-level long-lived radioactive waste disposal context, *Materials and Corrosion*, 2020; 1– 17. <https://doi.org/10.1002/maco.202011779>
18. DURBAN N., MAZARS V., ALBINA P., BERTRON A., ALBRECHT A., ROBINET J-C, ERABLE B., Nitrate and nitrite reduction at high pH in a cementitious environment by a microbial microcosm, *International Biodeterioration & Biodegradation*, vol. 151, p. 104971, <https://doi.org/10.1016/j.ibiod.2018.08.009>
19. EIRAS J., PAYAN C., RAKOTONARIVO S., GARNIER V., Damage detection and localization from linear and nonlinear global vibration features, *Structural Health Monitoring*, July 2020. <https://doi.org/10.1177/1475921720941792>
20. FARAH A., VILLANI P., ROSE C., CONIL S., LANGRENE L., PAOLO LAJ P., SELLEGRI K., Characterization of aerosol physical and optical properties at the Observatoire Pérenne de l'Environnement (OPE) site, *Atmosphere*, 11, 172, <https://doi.org/10.3390/atmos11020172>
21. FENART M., LAMEILLE J-M., LE FLEM M., BATAILLON C., LE TUTOUR P., FERON D., Irradiation influence on water-saturated corrosion of carbon steels at 80°C, *Materials and Corrosion*. 2020; 1– 13. <https://doi.org/10.1002/maco.202011850>
22. GABOREAU S., GAILHANOU H., BLANC P., VIEILLARD P., MADE B., Clay mineral solubility from aqueous equilibrium: Assessment of the measured thermodynamic properties, *Applied Geochemistry*, 113, <https://doi.org/10.1016/j.apgeochem.2019.104465>
23. GABOREAU S., GRANGEON S., CLARET F., IHIAWAKRIM D., ERSEN O., MONTOUILLOUT V., MAUBEC N., ROOSZ C., HENOCQ P., CARTERET C., Hydration properties and interlayer organization in synthetic C-S-H, *Langmuir*, *Langmuir* 2020, 36, 32, 9449–9464, <https://doi.org/10.1021/acs.langmuir.0c01335>
24. GARCÍA, D., HENOCQ, P., RIBA, O., LÓPEZ-GARCÍA, M., MADÉ, B., & ROBINET, J. C., Adsorption behaviour of isosaccharinic acid onto cementitious materials. *Applied Geochemistry*, 104625
25. GROUSSET S., URIOS L., MOSTEFAOUI S., DAUZERES A., CRUSSET D., DEYDIER V., LINARD Y., DILLMANN P., MERCIER-BION F., NEFF D., Biocorrosion detection by sulphur isotopic fractionation measurements, *Corrosion science*, 365, <https://doi.org/10.1016/j.corsci.2019.108386>
26. HASHIMOTO S., IMAMURA N., KAWANISHI A., KOMATSU M., OHASHI S., NISHINA K., KANEKO S., SHAW G., THIRY Y., A dataset of ¹³⁷Cs activity concentration and inventory in forests contaminated by the Fukushima accident. *Sci Data* 7, 431 (2020). <https://doi.org/10.1038/s41597-020-00770-1>
27. IMAMURA N., KOMATSU M., HASHIMOTO S., FUJIIA K., KATO H., THIRY Y., SHAW G., Vertical distributions of radiocesium in Japanese forest soils following the Fukushima Daiichi Nuclear

Power Plant accident: A meta-analysis, *Journal of Environmental Radioactivity*, <https://doi.org/10.1016/j.jenvrad.2020.106422>

28. LAJ, P., BIGI, A., ROSE, C., ANDREWS, E., LUND MYHRE, C., COLLAUD COEN, M., LIN, Y., WIEDENSOHLER, A., SCHULZ, M., OGREN, J. A., FIEBIG, M., GLIß, J., MORTIER, A., PANDOLFI, M., PETÄJA, T., KIM, S.-W., AAS, W., PUTAUD, J.-P., MAYOL-BRACERO, O., KEYWOOD, M., LABRADOR, L., AALTO, P., AHLBERG, E., ALADOS ARBOLEDAS, L., ALASTUEY, A., ANDRADE, M., ARTIÑANO, B., AUSMEEL, S., ARSOV, T., ASMI, E., BACKMAN, J., BALTENSPERGER, U., BASTIAN, S., BATH, O., BEUKES, J. P., BREM, B. T., BUKOWIECKI, N., **CONIL, S.**, COURET, C., DAY, D., DAYANTOLIS, W., DEGORSKA, A., ELEFThERIADIS, K., FETFATZIS, P., FAVEZ, O., FLENTJE, H., GINI, M. I., GREGORIČ, A., GYSEL-BEER, M., HALLAR, A. G., HAND, J., HOFFER, A., HUEGLIN, C., HOODA, R. K., HYVÄRINEN, A., KALAPOV, I., KALIVITIS, N., KASPER-GIEBL, A., KIM, J. E., KOUVARAKIS, G., KRANJC, I., KREJCI, R., KULMALA, M., LABUSCHAGNE, C., LEE, H.-J., LIHAVAINEN, H., LIN, N.-H., LÖSCHAU, G., LUOMA, K., MARINONI, A., MARTINS DOS SANTOS, S., MEINHARDT, F., MERKEL, M., METZGER, J.-M., MIHALOPOULOS, N., NGUYEN, N. A., ONDRACEK, J., PÉREZ, N., PERRONE, M. R., PETIT, J.-E., PICARD, D., PICHON, J.-M., PONT, V., PRATS, N., PRENNI, A., REISEN, F., ROMANO, S., SELLEGRI, K., SHARMA, S., SCHAUER, G., SHERIDAN, P., SHERMAN, J. P., SCHÜTZE, M., SCHWERIN, A., SOHMER, R., SORRIBAS, M., STEINBACHER, M., SUN, J., TITOS, G., TOCZKO, B., TUCH, T., TULET, P., TUNVED, P., VAKKARI, V., VELARDE, F., VELASQUEZ, P., VILLANI, P., VRATOLIS, S., WANG, S.-H., WEINHOLD, K., WELLER, R., YELA, M., YUS-DIEZ, J., ZDIMAL, V., ZIEGER, P., AND ZIKOVA, N., A global analysis of climate-relevant aerosol properties retrieved from the network of Global Atmosphere Watch (GAW) near-surface observatories. *Atmospheric Measurement Techniques*, 13, 4353–4392, <https://doi.org/10.5194/amt-13-4353-2020>
29. LASSIN A., GUIGNOT S., LACH A., CHRISTOV C., ANDRÉ L., **MADÉ B.** Modeling the Solution Properties and Mineral–Solution Equilibria in Radionuclide-Bearing Aqueous Nitrate Systems: Application to Binary and Ternary Systems Containing U, Th, or Lanthanides at 25 °C, *Journal of Chemical & Engineering Data*, <https://dx.doi.org/10.1021/acs.jced.0c00180>
30. LE CROM S., TOURNASSAT C., **ROBINET J-C.**, MARRY V., Influence of polarisability on the prediction of the electrical double layer structure in a clay mesopore: a Molecular Dynamics study, *Journal of Physical Chemistry*, 124, 11, 6221-6232, <https://doi.org/10.1021/acs.jpcc.0c00190>
31. LEROUGE C., DEBURE M., HENRY B., FERNANDEZ A-M., BLESSING M., PROUST E., **MADÉ B., ROBINET J-C.**, Origin of dissolved gas (CO₂, O₂, N₂, alkanes) in pore waters of a clay formation in the critical zone (Tégulines Clay, France), *Applied Geochemistry*, <https://doi.org/10.1016/j.apgeochem.2020.104573>
32. LEVIN, I., KARSTENS, U., ERITT, M., MAIER, F., ARNOLD, S., RZESANKE, D., HAMMER, S., RAMONET, M., VÍTKOVÁ, G., **CONIL, S.**, HELIASZ, M., KUBISTIN, D., AND LINDAUER, M., A dedicated flask sampling strategy developed for ICOS stations based on CO₂ and CO measurements and STILT footprint modelling, *Atmospheric Chemistry and Physics*, 20, 11161–11180, <https://doi.org/10.5194/acp-20-11161-2020>
33. MA B., FERNANDEZ-MARTINEZ A., WANG K., **MADÉ B., HENOCQ P.**, TISSERAND D., BUREAU S., CHARLET L., Selenite: Sorption on Hydrated CEM-V/A Cement in the Presence of Steel Corrosion Products: Redox vs Non redox Sorption, *Environ. Sci. Technol.* 2020, 54, 4, 2344-2352, <https://doi.org/10.1021/acs.est.9b06876>
34. MANZONI F., VIDAL T., SELIER A., **BOURBON X., CAMPS G.**, On the origins of transient thermal deformation of concrete, *Cement and Concrete Composites*, 107, <https://doi.org/10.1016/j.cemconcomp.2019.103508>
35. MARTY, N. C., GRANGEON, S., LASSIN, A., **MADÉ, B.**, BLANC, P., & LANSON, B. (2020). A quantitative and mechanistic model for the coupling between chemistry and clay hydration. *Geochimica et Cosmochimica Acta*, 283, 124-135. <https://doi.org/10.1016/j.gca.2020.05.029>
36. MENDIBIDE C., DUSQUESNES V., **DEYDIER V., BOURBON X., CRUSSET D.**, Corrosion behavior of aluminum alloy 5754 in cement-based matrix-simulating nuclear waste disposal conditions. *Materials and Corrosion*. 2020; 1– 13. <https://doi.org/10.1002/maco.202011687>
37. **MIDDELHOFF M.**, CUISINIER O., MASROURI F., **TALANDIER J., CONIL N.**, Combined impact of selected material properties and environmental conditions on the swelling pressure of

compacted claystone/bentonite mixtures, Applied Clay, Science, 184, <https://doi.org/10.1016/j.clay.2019.105389>

38. MONTAVON G., LEROUGE C., DAVID K., RIBET S., HASSAN-LONI Y., LEFERREC M., BAILLY C., ROBINET J.-C., AND GRAMBOW B., Nickel Retention on Callovo-Oxfordian Clay: Applicability of Existing Adsorption Models for Dilute systems to Real Compact Rock, Environmental Science & Technology, <https://doi.org/10.1021/acs.est.0c04381>
39. MOSSER-RUCK R., STERPENICH J., MICHAU N., JODIN-CAUMON M.-C., RANDI A., ABDELMOULA M., BARRES O., CATHELINÉAU M., Serpentinization and H₂ production during an iron-clay interaction experiment at 90C under low CO₂ pressure, Applied Clay Science, 191, <https://doi.org/10.1016/j.clay.2020.105609>
40. MUNIER T., DECONINCK J.-F., PELLENARD P., HESSELBO S. P., RIDING J. B., ULLMANN C. V., BOUGEAULT C., MERCUZOT M., SANTONI A.-L., HURET E., LANDREIN P., Million-year-scale alternation of warm-humid and semi-arid periods as a mid-latitude climate mode in the Early Jurassic (Late Sinemurian, Laurasian Seaway), Climate of the Past, 2020, <https://doi.org/10.5194/cp-2020-99>
41. PICCOLO A., DELEPINE-LESOILLE S., FRIEDRICH E., AZIRI S., LECIEUX Y., LEDUC D., Mechanical properties of optical fiber strain sensing cables under γ-rays irradiation and large strain influence, Sensors 2020, 20(3), 696; <https://doi.org/10.3390/s20030696>
42. RAMONET M. et al. (81 coauthors dont CONIL S.), The fingerprint of the summer 2018 drought in Europe on ground-based atmospheric CO₂ measurements, Philosophical Transactions of the Royal Society B., Vol. 375, 1810, <https://doi.org/10.1098/rstb.2019.0513>
43. ROBINEAU, M, SABOT, R, JEANNIN, M, DEYDIER, V, CRUSSET, D, REFAIT, P. Mechanisms of localized corrosion of carbon steel associated with magnetite/mackinawite layers in a cement grout. Materials and Corrosion. 2020; 1- 17. <https://doi.org/10.1002/maco.202011696>
44. SAMAKE, A., BONIN, A., JAFFREZO, J.-L., TABERLET, P., WEBER, S., UZU, G., JACOB, V., CONIL, S., and MARTINS, J. M. F., High levels of primary biogenic organic aerosols in the atmosphere in summer are driven by only a few microbial taxa from the leaves of surrounding plants, Atmospheric Chemistry and Physics, 20, 5609-5628, <https://doi.org/10.5194/acp-20-5609-2020>
45. SANCHEZ T., HENOCQ P., MILLET O., AÏT-MOKHTAR A., Coupling PhreeqC with electro-diffusion tests for an accurate determination of the diffusion properties on cementitious materials, Journal of Electroanalytical Chemistry, 858, <https://doi.org/10.1016/j.jelechem.2019.113791>
46. STAVROPOULOU E., BRIFFAUT M., DUFOUR F., CAMPS G., Time dependent behaviour of the Callovo-Oxfordian claystone-concrete interface, Journal of Rock Mechanics and Geotechnical Engineering, 12,1 89-101 <https://doi.org/10.1016/j.jrmge.2019.09.001>
47. TANAKA T., THIRY Y., Assessing the recycling of chlorine and its long-lived ³⁶Cl isotope in terrestrial ecosystems through dynamic modeling. Science of The Total Environment, 700, 134482, <https://doi.org/10.1016/j.scitotenv.2019.134482>
48. THIRY Y., TANAKA T., DVORNIK A.A., DVORNIK A.M., TRIPS 2.0: towards more comprehensive modelling of radiocesium cycling in forest, Journal of Environmental Radioactivity, 214-215, <https://doi.org/10.1016/j.jenvrad.2020.106171>
49. TREMOSA J., DEBURE M., NARAYANASAMY S., REDON P.O., JACQUES D., CLARET F., ROBINET J.C., Shale weathering: A lysimeter and modelling study for flow, transport, gas diffusion and reactivity assessment in the critical zone, Journal of Hydrology, Volume 587, 2020, article 124925, <https://doi.org/10.1016/j.jhydrol.2020.124925>
50. VERBEECK M., THIRY Y. & SMOLDERS E. (2020). Soil organic matter affects arsenic and antimony sorption in anaerobic soils. Environmental Pollution, 257, 113566, <https://doi.org/10.1016/j.envpol.2019.113566>