



ÉCOLE DOCTORALE SCIENCES DE LA TERRE



[Sujet proposé pour un début de contrat en octobre 2014](#)

Project : Interactions between Cs organic matter and clays in soils: application to decontamination and remediation

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Decontamination and remediation of soils after a nuclear incident or accident are major concerns for the return of populations. In order to define decontamination and remediation strategies it is important to know under which physical and chemical forms are the radionuclides in these environments. Radionuclides are showing different and competitive interactions with soils components: minerals, organic matter, bacteria, plants... This PhD thesis will occur within the framework of the French project call "Recherche en matière de sûreté nucléaire et de radioprotection" (RSNR, Demeterres) and will be focused on the main soil mineral and organic components (clay, humic substances), and on their interactions with the main contributors to the dose: caesium and strontium. These interactions will be quantified for the different components and compared with those of their main competitors: sodium, potassium, calcium, and magnesium. Finally, the obtained parameters will be tested on radionuclides migration experiments for real soils.