About cracks imaging in cementitious materials

Dominique Bernard*[1]

[1]Institut de Chimie de la Matière Condensée de Bordeaux (ICMCB) – CNRS : UPR9048, Université de Bordeaux – 87 Av du Dr A. Schweitzer 33608 PESSAC CEDEX, France

Abstract

Cracks are omnipresent within cementitious materials, and their characteristics (number, size, density, shape, etc.) are key parameters for estimating any physical properties. X-ray computed micro tomography (XCMT) is an unrivalled technique to image these cracks, mainly because it is a 3D technique, a non-destructive one, at least for the sample, and it provides high-resolution images. Logically, literature contains a huge number of studies where XCMT is used to characterize, in 3D or 4D, crack network in various cementitious materials. The first part of this presentation will consist in different examples of cracks imaging during in situ experiments. Based on these illustrations, the question of sample representativeness will be discussed taking into account the different objectives of the experiments.

*Speaker