

Water transport by capillarity in concrete

Concrete is a complex heterogeneous material that interacts mechanically and chemically with its environment. It implies a need for a deeper understanding of different coupled processes that involves overload damage, fatigue, corrosion or water flow, among others. In this talk we show the potentialities of the X-ray tomography and the diffraction to characterize complex processes of the material. Presenting the results obtained recently with a test performed at BAM in which the water front advance has been monitored by XRA, obtaining an interesting formulation that describes the observations. Other examples of application of XRA and diffraction to characterize fracture and damage, as well as the treatment of the data and its coupling with numerical models will be explained in the presentation.

