

# RELATIONSHIP BETWEEN AE PARAMETERS AND FRACTURE OF COMPOSITE MATERIALS UNDER SOLICITATIONS

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**Abstract :** Abstract: Acoustic emission (AE) techniques have been extensively studied in concrete engineering. There has been much research in relating AE parameters, such as energy, amplitude, count number, rise time to physical properties such as crack area delaminating, pull out, break down. Our work is performed using of carbon fiber reinforced polymer to study the evolution of AE parameters under solicitations. Meanwhile the waveforms created by the failure were monitored by AE sensors attached to the concrete beam. Examination of the waveforms produced by a range of four sensors with different frequency responses reveals that the fracture depth affects the AE parameters detected during failure. Relationship between fracture area and AE parameters was examined. These results can be used to aid the quantification of damage size based on energy release from concrete structures in the field.

**Keywords :** acoustic emission, carbon fiber, sollicitation, quantifi