

# Effect of Initial Crack-depth Ratio on Dynamic Fracture Properties of FRP Strengthened Concrete

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## Abstract

Abstract: In order to study the dynamic fracture properties of FRP strengthened concrete, the three-point bending experiment with different initial crack-depth ratios was carried out under dynamic loading. The effects of crack-depth ratios on the fracture parameters were analyzed. Combined with Pearson Correlation Coefficient formula, the correlation between crack-depth ratios and fracture parameters was quantitatively verified. The conclusions could be drawn that, there are three critical points in the damage process: the crack initiation point, first peak point and ultimate bearing capacity point. With the increase of crack-depth ratio, the crack initiation load decreases, but the first peak load and ultimate load increase first and then decrease. The stress intensity factors of three points also increase first and then decrease. The increment of critical crack-depth ratio and flexibility coefficient are related to crack-depth ratio, which could reflect the effect of crack-depth ratio on the deformation capacity of FRP strengthened concrete.

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