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A Study on the Effect of Residual Stress on a Fatigue Bahavior

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The effect of residual stress on fatigue crack growth was investigated in terms of finite element analysis. Simulations were performed on a CT specimen in plane strain. An interface-cohesive element that accounts for damage accumulation due to fatigue along the notch direction has been used. Numerical results show that fatigue crack growth rate slows down when compressive residual stress field exists in front of the crack tip.

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