Ultrasonic Guided Wave Monitoring and Evaluation for Steel Rebar Corrosion Damage

Dongsheng LI
Dalian University of Technology, School of Civil Engineering, Dalian, China
(eMail: lidongsheng@dlut.edu.cn)

Abstract

In order to test the corrosion damage of steel rebar, the propagation properties of ultrasonic guided waves (UGW) are explored. Numerical methods are employed to calculate the disperse curves. Optimal excitation signal and frequency are selected. According to the objects tested in steel rebar experiments, tress wave propagation in different conditions is simulated using finite software of analysis. The result of simulating of passive film rupture process in corrosion by two-dimensional Fourier transform demonstrated the effect of waveguide dispersion. At last, the method of using two-dimensional Fourier transform to indentify damage is given.