

Applicability of Rain Flow Method on Fatigue Life Estimation of Contact Wire

Atsushi SUGAHARA Chikara YAMASHITA Tadanori USUKI

Rain flow method has been proposed as a waveform counting method applicable for estimating the fatigue life under the actual strain waveform. The authors experimentally investigated its applicability to hard drawn copper contact wire. The fatigue life properties under various mean tensile stresses are necessary to consider the effect of mean tensile stress when applying the rain flow method. The authors confirmed that they can be estimated based on the fatigue test results under two mean tensile stress conditions for the hard drawn copper contact wire. Then, the authors conducted 6 numbers of fatigue test to investigate applicability of the rain flow method. The fatigue life obtained from the tests was generally longer than estimated fatigue life. The rain flow method is conceivable to derive safe side result of the fatigue life estimation for the hard drawn copper contact wire.