

Fatigue Life Estimation Method of Connector by using Finite Element Method

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Connectors between the contact wire and the messenger wire are always subject to fatigue damage due to vibrations caused by the passage of pantographs. However, in the conventional evaluation method of the vibration durability of the connector, actual vibration wave forms of overhead lines such as the contact wire and the messenger wire are not reproduced, and the dynamic characteristics of the connector depending on the shape and type of lead wire are not considered. The authors estimated the strain of the lead wire of connector by the finite element vibration analysis, and obtained the fatigue property curve of the lead wire by the rotary bending fatigue test. From these results, a fatigue life estimation method of connector against the actual vibration wave forms of over head lines has been newly developed.