

**Cage Wear Prediction Based on Measurement of Contact Force between Rolling Element and Cage
in Traction Motor Bearings in Railway Vehicles**

Daisuke SUZUKI Ken TAKAHASHI Fumihito ITOIGAWA
Satoru MAEGAWA Yoshiaki OKAMURA

Bearings used in traction motors in railway vehicles are used under light loads and at high rotational speeds, so that their life is determined by cage wear due to contact with rolling elements rather than raceway flaking. In this paper, in order to predict the cage wear, we measured the forces of rolling elements which act on cage. As a result, the magnitude, duration of action, and frequency of the forces could be obtained. In addition, the forces were integrated with time to obtain impulses to show the relationship between the impulses and the cage wear.